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THE RESULTS OF HIGH ATROPINE DOSAGE IN CHRONIC EPIDEMIC ENCEPHALITIS, WITH COMMENTS

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In the article on treatment of the post-encephalitic Parkinsonian which appeared in this *Journal* on September 21, 1935, reference was made to a series of cases then undergoing treatment by high atropine dosage. Since then more cases have been treated, and it has been possible to follow them up long enough to warrant certain conclusions as to its value.

For the large amount of time and trouble in carrying out the treatment and keeping records my sincere thanks are offered to many colleagues, both at public institutions and in private practice, including, amongst others, Dr. Bamford, medical superintendent, Gateshead Mental Hospital; Dr. Pool and his staff at the South Yorkshire Mental Hospital; Dr. Schneider and his staff at Rampton State Institution; Dr. E. Fretsen Skinner at the Sheffield Royal Hospital; and Professor E. J. Wayne at the Sheffield Royal Infirmary. To Professor Wayne I am particularly indebted, not only for the great trouble and interest he has taken in the cases which he has had under observation in his wards from my clinic, but also for his criticism and advice in the preparation of this paper. My part has thus been only that of a collector. At the same time any opinions, views, or conclusions which follow are mine, and I alone take responsibility for them. It has for long been known that atropine in the form of belladonna, stramonium, or hyoscine may relieve the physical disability in some cases of chronic epidemic encephalitis, and that for this purpose doses rather larger than those laid down in the *British Pharmacopoeia* are often required. Bremer (1925) called attention to the fact that Parkinsonians showed unusual tolerance to this alkaloid, so that as much as 20 mg. a day had been given per os without the occurrence of toxic symptoms. The method known as high atropine dosage, introduced by Kleemann (1929), is based upon Bremer's observations. Since then the method has been widely adopted. It is not necessary to go into full details of this method, which can be found in the article already referred to (Hall, 1935), but some general indications will be given as to certain modifications which have been found useful.

Estimation of Optimal Dose

Kleemann (1929) begins with 0.5 mg. of atropine daily in the form of 1/2 per cent. solution of atropine sulphate given in two doses. (One drop contains 0.25 mg.) This is increased by 0.5 mg. daily, spread over three doses, so long as any objective or subjective improvement is produced (maximal dose). When this point is reached reduction should be gradual in order to fix the optimal dose on which improvement is maintained.

In many of the cases in this series this method has been followed. In some, however, after an initial small dose has been tolerated, a greater daily increase has been made without ill effects. Indeed, in patients who have previously been for some time on tincture of belladonna one may give 5 or even 10 mg. of atropine on the first day and increase by 2.5 mg. daily, not only without ill effects, but in suitable cases with rapid benefit.

Earlier observers have emphasized the necessity of keeping the patient in bed whilst estimating the optimal dose. In our experience, unless already bed-ridden, complete rest is neither necessary nor desirable after the first day or two of treatment. Even those bed-ridden at the onset should be encouraged to get up as soon as they show signs of improvement. Close daily observation of the patient is essential so long as the dosage is being increased.

In Kleemann's cases the usual optimal dose was 3 to 7 mg. atropine daily. In this series the average optimal dose was about 18.5 mg. atropine daily. The highest was 54 mg.—with definite improvement. Maximal and optimal doses, however, are not fixed points on a measurable standard, but largely dependent on two variables, the patient and the physician. In many cases, indeed, they are very difficult to assess. At any rate, the fact that 54 mg. of atropine per day can be tolerated not only without harm but with benefit shows that even the less bold prescribers need not apprehend serious danger when estimating the maximal dose. Reference will be made later to such unpleasant effects as may arise and how they may best be met.

One further point as regards the continuation of treatment after the optimal dose has been found. We have found it a convenience to prescribe the atropine in coloured tablets. Pink tablets contain 4 mg. atropine; yellow only 1 mg. By this combination of strengths it is easy to obtain any required dose of 1 mg. or upwards. The patient has no difficulty in knowing exactly how many of each colour he has to take for a dose, and this coloration distinguishes them from other less potent tablets.

Van der Meulen (1933) and others have emphasized various dangers which may occur on a sudden omission of a dose in the course of treatment. So far as this series is concerned omissions have occurred from time to time without any untoward results.

Published Records

The records of high atropine treatment published from time to time by different observers differ widely in the results obtained. At one extreme are those which claim

high percentages of complete or almost complete recoveries, at the other those in which the results have been disappointingly slight and fugitive. The greater number of records published by those who have given the method an adequate trial show results somewhere between these two extremes. They agree that in certain cases the results are extremely good, in others there is definite improvement, whilst in still others benefit is slight or absent.

In analysing the following series of cases an attempt will be made to suggest some data whereby it may be possible before advising this somewhat severe line of treatment to foretell which cases are likely to benefit and which are not.

To do this it is necessary to have some method of dividing the cases into groups. This is difficult, because the virus of encephalitis, although having a predilection for certain levels, may attack almost any part of the nervous system, and in so doing may affect some one or other part only, or several parts together to an equal or unequal extent. It may thus give rise to two broad classes of disability, which, although necessarily closely intermixed in effects, may be termed "psychotic" and "physical" respectively.

Classification of Physical Disabilities

A simple basis for classifying physical disability in Parkinsonism is one suggested by me in 1934—namely, the extent to which it interferes with the three acts of everyday life which mark the limit between dependence and independence. These are feeding, dressing, and moving about. The three classes of physical disability would then be:

1. Complete independence.
2. Partial dependence.
3. Complete dependence.

In Class 1 may be placed those who can feed and dress themselves and walk about without assistance. They may be very slow at their meals; there may be some shakiness. They may have oculogyric attacks or torsion spasms. Their gait may be abnormal, they may even fall over at times, but *they do not require physical assistance.* They can look after themselves.

Class 3 is also clearly defined. They can neither feed nor dress themselves; they cannot walk without help; indeed in some cases they cannot even turn over to change their position in bed, but have to call for help in order to do so.

Class 2 necessarily includes persons who differ widely in the amount of their physical disability. Some can walk without help, but cannot feed themselves on account of tremor. Others can feed and dress themselves, but cannot walk without help, and so forth. In other words some are almost independent, others largely dependent.

These three classes of physical disability are not necessarily consecutive. Although the tendency is for the Parkinsonian to become gradually more helpless as time goes on, yet this is not always so. There are cases which remain in Class 1 year after year and show no tendency to get worse; others who quite early in their illness were in Class 3, but owing to treatment of various kinds have returned to, and remain for years in, Class 1 or Class 2.

Classification of Psychotic Disability

To classify "psychotic disability" is more difficult The forms in which it may show itself are too numerous and too complex to serve as a basis. For practical purposes, however, it is convenient to make two groups, according to the extent to which it dominates the clinical picture. Thus into Group A are placed those in whom psychotic disability may be said to be "primary or predominant," and into Group B those in whom it is "secondary, or so slight as to be negligible." This or any such arbitrary grouping is necessarily very imperfect. Usually, however, there is little or no difficulty in deciding to which group a particular case belongs.

In most of the cases under certificates the predominance of psychotic disability is obvious. On the other hand, in a certain small number of certified patients, especially those in whom "physical disability" is advanced, the "psychotic disability" has either always been secondary to the physical disability or though originally predominant has become less so with the increase of the latter.

By combining the degree of psychotic and physical disability present in each case it is possible to classify the encephalitics in the following way:

Psychotic Disability	Physical Disability
Group A: Marked	(1) Independent
"	(2) Partially dependent
"	(3) Wholly dependent
Group B: Slight or absent	(1) Independent
"	(2) Partially dependent
"	(3) Wholly dependent

In the fifty-eight cases here recorded this form of classification has been adopted, and, as will be seen from the results, the benefits obtained from large doses of atropine have been very different in the different groups.

TABLE I.—*Fifty-eight Cases of Chronic Epidemic Encephalitis Grouped According to their Disabilities*

Psychotic Disability	Physical Disability	No. of Cases	
Group A: Marked	(1) Independent	26	
	(2) Partly dependent	8	
	(3) Wholly dependent	10	
		—	44
Group B: Slight or absent	(1) Independent	4	
	(2) Partly dependent	2	
	(3) Wholly dependent	8	
		—	14
			58

The larger number of cases in Group A is due to the fact that opportunities for carrying out observations such as these necessarily offer themselves more readily at mental hospitals, where there are many such cases and the requisite control is possible.

The results are given in three categories—namely:

(*a*) Great improvement.
(*b*) Definite improvement.
(*c*) Slight or no improvement.

TABLE II

Classification	No. of Cases	Improvement		
		Great	Definite	Slight or None
Group A: (1)	26	0	5	21
" (2)	8	0	2	6
" (3)	10	2	2	6
Total ..	44	2	9	33
Group B: (1)	4	0	3	1
" (2)	2	1	1	0
" (3)	8	6	2	0
Total ..	14	7	6	1

Cases Greatly Improved

It is seen that in nine cases (three men and six women) the improvement is described as "great." Such a term hardly does justice to the facts; it might well be called "extreme."

In each of these cases the person, who had been practically bed-ridden and required help in almost every act of daily life for a long period (in some cases years), was, as the result of treatment, not only able to be up and about but also to take part in and enjoy social life again. The following is a short account of four of these cases:

Case 41: Female, aged 49.—Acute attack in 1919. In 1921 Parkinsonism developed with stiffness and tremor of the right arm and leg. There was never any excessive salivation. Mental symptoms took the form of a somewhat childish emotional psychasthenia. In 1925 treatment by belladonna was begun, and 20 minims of the tincture was taken three times a day. On this she improved very considerably. Exactly for how long or how regularly this treatment was continued is not recorded, but the history of the next few years shows that it was not continued regularly and the doses were diminished. In 1933 there was considerable mental depression. The Parkinsonism was much more marked. She was unable to walk by herself, although not actually bed-ridden. She was unable to write even her own name on account of the continuous tremors. At that time she was taking 10 minims of tincture of stramonium three times a day. High atropine dosage was begun in July, 1935. In August she was taking 13 mg. of atropine per day, and the improvement was very great. The tremor in the legs had largely disappeared, and was so much less in the right hand that she was able to write a letter without any recognizable tremor in the handwriting. More than a year later, in January, 1937, she can walk a mile without difficulty, play on the piano again, and sew and knit. She has lost her mental depression, and is brighter and happier than she has been for many years. The daily dose of atropine is 10 mg. given in four equal doses.

Case 54: Female, aged 29.—Bed-ridden for four years, unable to feed herself or to walk without assistance. Speech almost inarticulate. Marked hypertonus. Optimal dose of atropine, 30 mg. per day. Condition after four months' treatment: she is up and about, can feed and dress herself, takes part in domestic work, goes out for long walks, and dances.

Case 57: Female, aged 41.—Acute encephalitis in 1921, followed by Parkinsonism. During the last few years she has been completely dependent, requiring to be fed, dressed, and helped to walk only a few steps. In March, 1936, high atropine treatment was begun. The optimal dose was 42 mg. The following is an extract from a letter written early in 1937 by the patient herself—that is, about a year after treatment was begun. The handwriting does not show any trace of Parkinsonism. "I could not walk a hundred yards without holding someone's arm, and could not feed myself or help myself in any way. Now I can walk three miles quite alone, feed myself perfectly, take off my own coat, etc. . . . I am so much better that I hardly know myself."

Case 52: Male, aged 30.—Bed-ridden for five years, had to have help in feeding and walking. Speech almost unintelligible. Salivation excessive and continuous. Severe tremor of both arms and legs. Optimal dose of atropine, 30 mg. a day. Condition after four months' treatment: up and about every day, looks after himself, helps in housework, goes to "pictures" and entertainment. Takes a pride in his appearance. Tremor much less.

At first sight a record of "great improvement" in only nine out of fifty-eight cases does not seem to compare favourably with some of the results published elsewhere. If, however, it is realized that in this series there were only seventeen whose physical disability had reached Class 3 the percentage of "great" improvements among these becomes considerable.

In Table II it will be noticed that of these nine cases of "great improvement" seven belonged to Group B—that is, their psychotic disability was not predominant, whilst their physical disability before treatment was Class 2 or Class 3.

Unless the physical disability is considerable before treatment is begun it can hardly be said to improve "*greatly*." All such striking and dramatic improvements as have been from time to time recorded must have been Parkinsonians of Class 3 or the more dependent cases of Class 2, such as Case 41 of this series, who had to be placed in Class 2 because she was not *completely* dependent, yet her dependence on others before treatment was almost complete and her improvement could only be described as "great."

But if atropine is so effective in relieving serious physical disability (Class 3) why did it fail in six cases in Group A (3)? In four of them (Cases 6, 22, 34, and 38) the answer is easy. Long-standing Parkinsonism had in each of them led to deformities of the arms, legs, and trunk of such an advanced kind that a return to useful conditions was impossible. In the remaining two cases (Nos. 16 and 31) there was no such deformity. In them the lack of improvement was due to the predominant psychotic disability. Both were very impulsive. Neither of them would co-operate. In this connexion a word must be said about Case 42, one of the B (3) group, whose improvement was not so great as expected.

This girl had been leading the life of a complete invalid for some years at the home and under the care of a devoted relative, who had done everything for her. She was very emotional and would not co-operate in anything that required effort on her part. She had become so accustomed to invalidism and the daily routine of doing nothing whatever to help herself that she would rather remain *in statu quo* than undergo any treatment which involved the least personal discomfort.

Indeed this question of lack of co-operation is by no means uncommon in Parkinsonians of Class B (3), in whom there is a considerable psychotic element.

In fairness to the method, however, it must be admitted that in most of these there was some slight improvement; thus the records state:

Case 6.—Speech a little better, saliva a little less, can move about in bed a little more easily.

Case 38.—Able to help himself a little in feeding. Speech rather clearer.

Case 22.—Oculogyric attacks have ceased since treatment.

Case 42.—Rigidity and tremor rather less, speech more intelligible.

As regards the thirty-four patients in whom psychotic disability was marked (Group A), and physical disability less, (1) and (2), "great" improvement is not recorded in any, and even improvement which could be called "definite" in a small number only.

These results are in general agreement with those obtained by other observers. It is the general experience that the mental condition of these patients, except as in so far as it is secondary to the distressing physical disability, is not improved to any extent by atropine treatment.

Psychotic disabilities, however, vary so widely in character that it is impossible to generalize. Busse (1932) in a report on 130 cases thinks that it has a definite action on impulsive disorders but no effect on hyperkinetic psychomotor cases. He finds that it may relieve quarrelsomeness by diminishing motor rigidity. Lisak (1932) finds that it has no beneficial effect on character changes. In the mental depression secondary to the physical dis-

ability, however, improvement is often marked, as is shown above in the letter written by Case 57. Indeed, to return from complete helplessness to ordinary life sometimes produces a condition of euphoria.

Special Symptoms

Salivation.—This is the one condition that should always benefit from full doses of atropine, and indeed even when troublesome will often improve on much smaller doses of atropine, such as are contained in the *B.P.* doses of tincture of belladonna. It is, however, by no means a constant symptom. It may be completely absent, even in advanced cases, whilst in others much less advanced it is a serious source of annoyance.

Oculogyric Attacks.—These were present in twenty-two of the cases. In five there was no improvement. In twelve the attacks were less frequent after treatment. In five it is recorded that they had ceased entirely. There seems no doubt that under high atropine treatment these troublesome attacks may cease entirely, at any rate for long periods. Their frequency and severity, however, vary so widely in the same individual from time to time, and are so readily influenced by emotional and other psychical happenings, that it is always difficult to be sure that they are permanently arrested or to name the exact agent which has stopped them for the time being. Though not merely a hysterical phenomenon, yet, in those liable to them, excitement, correction, or having to do something they do not like will readily bring on an attack, while sufficiently strong suggestions of various kinds may prevent them or stop one that has begun. In one man (Case 25) an observant attendant in charge of the patient assures me that the attacks have been much less frequent since the patient was not allowed to lie down when one threatened to come on.

Discomforts Early in Treatment

Various discomforts were complained of in the initial stages of the treatment, but on the whole they were few and capable of relief. Among these were:

Occasional mental confusion or slight delirium coming on shortly after taking the drug and lasting sometimes for an hour or two; in some cases temporary loss of memory and occasionally vertigo. Drowsiness about two hours after a dose has also occurred.

Visual disturbance due to paralysis of accommodation is common and tends to cause annoyance or even alarm. This can be relieved temporarily by (1/2 per cent. solution of eserine) drops in the eyes, and later by glasses adapted for complete loss of accommodation. In any case with a suspicion of glaucoma the treatment is contra-indicated.

Dryness of Mucous Surfaces.—Dryness of the mouth and throat occurred in a few cases and gave rise to difficulty in swallowing. Dryness of other mucous surfaces besides the mouth may cause discomfort. Thus in two women there was irritation about the vulva and in one man troublesome priapism. One patient complained of constipation with undue dryness of the anus. All these were relieved by a simple ointment.

Gastro-intestinal upsets in the form of vomiting and acute diarrhoea occurred in a few cases. They were, however, only occasional, and were relieved by ordinary measures without stopping the atropine.

Difficulty in starting micturition was observed in one or two of the men, but was not of serious importance, nor did it call for special treatment.

Hyperthermia during Treatment

A certain number of observers have recorded occasional rises of temperature during the taking of large doses of atropine. Such an occurrence after atropine has long been recognized by pharmacologists. According to Cushny (1936) "atropine often induces a marked rise in temperature, the cause of which cannot be said to be definitely known. According to Ott the dissipation of heat is increased, but the heat formation undergoes a still greater augmentation." Sollmann (1936) says, "Atropine suppresses perspiration and thus causes a rise of temperature with moderate doses, notwithstanding the cutaneous vasodilatation. . . . Larger doses produce a fall of temperature from lessened heat production." Dixon (1936) says, "It is not uncommon to find a small rise in temperature after taking a large dose of atropine. This is probably a direct action on the thermogenic centre. It cannot be due to a diminished loss of heat because the amount of heat dissipated is actually increased. In severe cases of poisoning the temperature rises sometimes very high, even to 107° or 108° F. It is this rise in temperature which is responsible for the vasodilatation of the skin vessels; it is an attempt on the part of the nerve centres to lower the temperature by increasing the loss of heat." It is evident that, as Cushny says, the cause cannot be said to be definitely known.

It was observed in four cases of this series. In three of these (Nos. 1, 2, and 3) the circumstances are of especial interest in connexion with the above opinions as to its cause. These men were all in the same ward, and in each the dose of atropine had reached a considerable height (33.5 mg. daily). A sudden spell of very hot weather had occurred in August, the ward thermometer registering 78° F. Each man's temperature went up to 104° F. or rather higher. There was no discomfort other than thirst, and in each the temperature was easily reduced by sponging. It seems probable that a contributory cause in these three cases was an inhibition of sweating due to the atropine. In this connexion it is of interest to recall that more than one fatal case of hyperpyrexia has been described in chronic Parkinsonians. Astley Cooper (1936) mentions a fatal case of heat stroke apparently "due to failure to move out of the sun," and he adds (I think pertinently) "*combined with stramonium medication.*"

In one of the fatal cases with hyperpyrexia (temperature 109° before death) which I recorded in 1935 the question of it being really a heat stroke due to exposure had not occurred to me until reading Astley Cooper's paper. Inquiry, however, in my case showed that this man also had been sitting in the sun without moving for most of a day, which happened to be exceptionally brilliant and hot. About 5 p.m. the attendant noticed that he looked ill. He was put to bed and found to have a temperature of 105°. In spite of treatment the temperature rose steadily, drowsiness increased to coma, and before death at 7 a.m. next day the temperature had reached 109°. This man also was taking stramonium in full doses, and had been doing so for some time.

These two cases taken together suggest that in persons under the influence of atropine in any form, whatever may be the explanation, the possibility of dangerous hyperpyrexia on exposure to a heat considerably less than affects normals must not be overlooked.

Occupational Therapy

Among those who have obtained the best results from high atropine treatment the importance of supplementing it by various forms of mental and physical treatment is generally agreed. This cannot be too strongly emphasized. In the early cases recorded by Kleemann (1929)

baths of various kinds, massage, and physical exercises formed a conspicuous and valuable feature of the treatment. At institutions where there are numbers of Parkinsonians such measures are more easily carried out, although remedial baths, massage, and machines for exercising are not available for treatment in this country as widely as in Germany; yet it is not the exact physical nature of the supplementary treatment which matters so much as the suitable and regular occupation for mind and body. This can be carried out at any institution provided it is organized and supervised. Simple domestic duties, easily devised occupations graded to suit the capacity of each individual, games, physical drills, and competitions are quite as valuable as baths or massage, if not more so.

In private cases where treatment has to be carried out under home surroundings this "occupational therapy," using the term in its widest sense, is often more difficult. It is not uncommon to see one of these patients after improving greatly in hospital go steadily back to his former condition on returning home, even if atropine treatment is continued.

The importance of "environment" cannot be too strongly emphasized. All that the atropine does is to release the brake in the Parkinsonian's musculature. What use will be made of it depends upon what there is to do and what encouragement to do it.

There is still one other factor of great importance, whether the treatment is carried out at an institution or in the private house—that is, the personal will power of the individual himself, upon which the effect of treatment largely depends. Without full co-operation it is impossible for benefit to be obtained, or if attained maintained.

In some of the records published in Germany many of the cases are said to have left the institution fit for work (arbeits-fähig) as the result of high atropine dosage. In most of these it would seem that the Parkinsonian disability must have been only (1) or (2), and the psychotic disability Group B. If so, in our experience a similar result would probably have been obtained by much smaller doses of belladonna or stramonium.

But once a Parkinsonian always a Parkinsonian, and whilst the physical disability may have been so much relieved by treatment as to make the patient fit for work, very few are in a condition to compete with normal persons in the labour market.

Summary

1. Treatment by very large doses of atropine (high atropine dosage treatment) causes remarkable improvement in certain cases of post-encephalitic Parkinsonism.

2. The greatest benefit is seen in cases in which the disability arises chiefly from muscular stiffness and excessive flow of saliva.

3. Improvement may also occur in tremor, in the frequency of oculogyric attacks, and in various spasmodic symptoms. In these, however, it is less in amount and more variable.

4. Cases in which psychotic disability is predominant and Parkinsonism is either absent or only slight do not usually show much benefit from this form of treatment. Where the psychotic disability is largely secondary to the physical disability removal of the latter by high atropine dosage may be accompanied by definite improvement in the former.

5. Under no circumstances does the Parkinsonian syndrome completely disappear; and unless the treatment is maintained and reinforced by suitable environment, using the term in the widest sense, there is usually a rapid return to the pre-existing condition.

Concluding Remarks

Where physical disability is maximal and psychotic minimal (Group B 3) treatment by very high doses of atropine is capable of producing results of a remarkable kind, provided that the physical disability has not caused serious deformities, and that there is full co-operation on the part of the patient. Conversely, where psychotic disability is maximal and physical minimal (Group A 1) it is not likely to be of much benefit. The fact that some cases not only tolerate massive doses but do not begin to improve until they are reached, whilst others improve on doses within or but little beyond the limits given in the *Pharmacopoeia*, suggests a quantitative factor in its action.

Its administration in massive doses is unnecessary in those cases of chronic epidemic encephalitis in which it is not likely to be of service, and uncalled for in any case until ordinary doses have been tried and failed. Otherwise there is a danger of bringing discredit on the most efficient agent we possess in relieving some of the disabilities of Parkinsonism.

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A. Hautant (*J. Laryng.*, February, 1937, p. 65) describes certain lesions of the larynx in which a differential diagnosis may be extremely difficult or almost impossible. In general, tuberculosis of the larynx can be easily distinguished from cancer by the following characteristics. Laryngeal tuberculosis does not fix the vocal cords; it is accompanied by lung lesions and there are tubercle bacilli in the sputum; in histological sections giant cells are seen. The exceptional cases where diagnosis is difficult are said to fall into three groups. (1) Unilateral tuberculosis, localized in the subglottic region. (2) Tuberculous tumour of the ventricle with quiescent pulmonary tuberculosis. (3) Cancer simulating tuberculosis owing to its situation and aspect. The author gives clinical examples belonging to each group with many excellent illustrations and diagrams. One of the photomicrographs shows a tuberculous giant cell in contact with a deep epithelial cord of a carcinomatous nature. The association of tuberculosis and cancer in the same laryngeal lesion has very rarely been observed. With negative findings in the lungs and sputum the limited tuberculous tumour may be confused with a simple neoplasm. In such cases the tuberculous mass sometimes invades the cartilage and fixes one cord: confusion with cancer is then almost certain. In the event of the diagnosis as between tuberculosis and cancer remaining uncertain, active laryngeal treatment must be carried out with extreme caution. An untimely surgical operation might cause a fatal attack of acute tuberculosis. Hautant relies a good deal on side-view radiographs of the larynx, a method of investigation which appears to be little used in this country. One can see the outline of the thyroid and cricoid cartilages and shadows of tumour masses within these outlines.

SURGICAL INTERVENTION IN OBSTETRICAL PRACTICE

INDICATIONS FOR AND AGAINST*

BY

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In the time at my disposal I can only mention the outstanding indications for and against surgical intervention in obstetrical practice. I shall endeavour to discuss the subject from the standpoint of the general practitioner. It is true that major operations, such as Caesarean section, have eventually to be referred to the specialist for their performance, although the family doctor in many cases is the first to give advice as to the procedure to be adopted. It is generally agreed that the wider the experience one has gained in the management of obstetrical cases the more conservative one becomes in their treatment. Maternal mortality statistics published from all parts of the world prove that the practice of conservative methods in midwifery gives the most favourable results. Not infrequently it has happened with all of us at some time or other that more courage is required to leave well alone than to terminate the pregnancy or labour by some method of operation. My general rule is "when in doubt do nothing." The old political quotation "wait and see" is not a bad rule to follow in obstetrical practice. I might, however, qualify this by stating that once a decision has been made for operative intervention it should be carried out promptly with the best possible surgical and aseptic technique obtainable.

It must be remembered that obstetrics is not a branch of surgery; it stands alone, and has its own methods of procedure. It is the exercise of wise judgement that really gives good results.

Ante-natal Complications

These comprise mainly the indications for (*a*) induction of abortion, (*b*) induction of premature labour, (*c*) version, (*d*) operations for tumours complicating pregnancy, and (*e*) haemorrhages.

(*a*) INDUCTION OF ABORTION

With our modern methods of medical treatment induction of abortion is not resorted to so frequently as was the case in former years, when often the sole method of treatment was the termination of the pregnancy. An example of this may be found in diabetes, where the administration of insulin has proved so effective. In vomiting of pregnancy isolation of the patient and treatment of the symptoms of starvation by dieting have reduced the incidence of induction to a remarkable extent. I now practically never terminate an early pregnancy on account of vomiting. The three main conditions calling for the consideration of induction are cardiac disease, pulmonary tuberculosis, and nephritis.

In cardiac disease no definite rules can be laid down. Each case must be judged on its merits, with due regard to the condition of the heart and its reaction to exertion and prolonged rest. It is advisable to have in consultation a colleague with special experience in this disease. The use of the electrocardiograph and *x* rays has helped very much in making a more exact prognosis than was formerly possible. I have again and again had experience of the improvement which takes place in a damaged heart by careful ante-natal supervision and treatment. It not infrequently happens that in those cases in which there had been no treatment previously, the heart is in better condition at the end of pregnancy than at the beginning. The strain of late pregnancy and labour, however, must necessarily be considered when one is forming an opinion as to the advisability of the continuation of pregnancy. In 200 cases of heart disease treated in the Royal Free Hospital, a number of whom were sent in for the purpose of induction, only 6 per cent. had their pregnancies terminated. The mortality of these patients when followed up for a considerable period was 2 per cent.

In pulmonary tuberculosis the indications for induction in patients with early active lesions are more evident than in chronic cases. Treatment by artificial pneumothorax and other methods should be tried before resorting to induction. It must be remembered that any forcible surgical interference in these conditions is not advisable; I have seen serious haemoptysis follow a straightforward induction of abortion. The slow method of emptying the uterus by laminaria tents is to be preferred. I feel convinced that the termination of an early pregnancy will not be necessary once we have established proper medical treatment for these patients. They should have residence in a sanatorium without any break in the continuity of the treatment during the confinement and post-natal period. It is the present method of turning these patients out of a sanatorium a few weeks before labour is due that is so detrimental to a possible cure. Sanatoria make no provision for maternity cases and are anxious to avoid all risk of the confinement taking place. The maternity hospitals avoid the admission of tuberculous patients as far as possible owing to the fear of infection.

In cases of nephritis with hypertension, albuminuria, etc., I have little hesitation in terminating a pregnancy when treatment by ordinary methods has failed. There is a risk not only of permanent damage to the kidneys, but as is shown by the history of these patients when followed up, death occurs within a few years of the confinement in quite a number of instances. The ovum frequently dies and may be extruded in a macerated condition, which goes to show that Nature herself has her own methods of treatment. A marked amount of albumin and persistence of a high diastolic blood pressure are indications for removal of the ovum. I have found that hysterotomy with or without sterilization has given very good results. The ophthalmological examination is often the deciding factor in the consideration of induction. Haemorrhages or destructive changes in the retina are an indication for intervention in most instances. I hope in the future that in these cases of nephritis some method of treatment will be found to obviate the necessity for termination of the pregnancy.

(*b*) INDUCTION OF PREMATURE LABOUR

The indications for and against this are much the same as for abortion. The problem in the case of premature labour is not an ethical one, as the operation is performed in most instances to save the life of the infant—for example, in cases of habitual death of the foetus at a given week of pregnancy. I have been trying the effect of medication by vitamin E—wheat-germ oil—in a few cases with encouraging results.

In cases of marked pelvic contraction or disproportion where, for example, the head cannot be pushed into the brim at the thirty-sixth week, it is obvious that Caesarean section is indicated; but we all have experience of the head which stubbornly refuses to enter the brim of the

* Address given to the Huddersfield Division of the British Medical Association, February 3, 1937.

pelvis until the last moment, when it passes through without any injury to itself or the maternal structures. Trial labour, therefore, is essential in all doubtful cases. Hot sitz baths, sedatives, and anaesthetics during labour render its progress much easier. In cases where there is a doubt as to the possible necessity of a Caesarean section no vaginal manipulation should be carried out. For this reason surgical induction causes more risk if a subsequent Caesarean section has to be performed.

Labour is rendered easier in doubtful cases if careful dieting and walking exercises during pregnancy are advised. If fifteen grains of chloral hydrate are given every night for a week or ten days before labour is due rigidity of the cervix may be prevented.

(*c*) VERSION

Version is not necessary in the majority of cases of breech presentations, as most foetuses turn spontaneously before the thirty-sixth week. In my experience of antenatal examinations about 25 per cent. of all cases have a breech position before the thirty-second or thirty-fourth week.

Version should be attempted only after a radiograph has been taken of the position of the foetus, and the patient should be admitted to hospital or have the manipulation carried out in her own home. It may be necessary to give an anaesthetic. If version is easy the probability is that spontaneous version would have taken place if the case had been left alone. Version fails in most cases because of extension of the back and legs. It is a dangerous procedure in cases of toxaemia or nephritis, as it may cause separation of the placenta and death of the foetus, or even of the patient from haemorrhage.

(*d*) TUMOURS

Tumours of the ovary tend to twist during pregnancy and in most cases should be removed.

Fibroids give little trouble unless they cause pressure symptoms. If they occur in the pelvis Caesarean section and enucleation is the operation of choice. If the patient is young the uterus should not be removed if it can possibly be saved. I have performed Caesarean section in a young patient with a uterus studded with fibroids and have not removed them. They involuted, and the patient had no subsequent symptoms of pressure or haemorrhage. In the case of degenerating fibroids associated with toxic symptoms I treat the patient for toxaemia, and if necessary perform Caesarean section at term. Fibroids should not be interfered with during pregnancy unless there are symptoms of pressure or evidences of acute infection.

In some cases I have enucleated a degenerated fibroid from the uterine wall several weeks after delivery, with successful results and without recourse to hysterectomy.

(*e*) HAEMORRHAGE

In toxic haemorrhage the less interference the better. If the haemorrhage occurs in the late weeks of pregnancy absolute rest in bed and the administration of morphine will be sufficient; this should be followed by treatment for the toxaemia. Rupture of the membranes may be necessary in some cases. I have given up packing the vagina and all manipulation. It is remarkable how well these cases do compared with those treated by surgical methods. One must always remember in these cases that the danger of any interference is shock, increased haemorrhage from lacerations, and sepsis. In toxic conditions of the liver pressure by an abdominal binder is dangerous.

In placenta praevia intervention in most cases must be prompt if haemorrhage takes place. I have kept cases of slight haemorrhage under observation with good results, but there is always anxiey, as sudden and fatal haemorrhage may take place. Version, performed in order to control the placental bleeding by means of the foetal buttock, has its uses. Willett's clamp is useful if the head is down and the foetus not too premature. In central placenta praevia Caesarean section should always be considered if there is a living foetus.

Intervention During Labour

Forceps.—The application of forceps is more of a problem in practice than one at first realizes. In most cases of domiciliary midwifery the practitioner is influenced to some extent by a desire to terminate the labour on account of the suffering of the patient and the risks to the foetus attendant upon delay. The anxiety of the relatives may tend to precipitate matters. The forceps rate in such practice is higher, therefore, than in hospital cases. The urgency for instrumental delivery can be avoided by the administration of sedatives in the first stage; and anaesthetics, such as gas and oxygen or gas and air, during the second stage. Forcible muscular exertion on the part of the patient should be avoided as it causes uterine fatigue. The lithotomy position gives more room for the head to come down to the outlet, and simulates the Eastern method of delivery by means of the squatting position. I do not apply forceps when the head is high in the pelvis, and I consider the administration of pituitrin a danger, except after the termination of the third stage of labour.

If the perineum is preventing the expulsion of the head or is showing signs of laceration a median episiotomy is of value. The lateral incision may prevent extension of the tear, but I have found it difficult sometimes to get primary union. Undue stretching of the perineum is just as frequent a cause of rectocele as a lacerated perineum. Careful suturing of the perineum in layers will prevent subsequent prolapse. If primary union does not take place I make it a rule to have the wound thoroughly cleansed by swabbing with an antiseptic (dettol for choice) and in about ten days to freshen the edges and unite them by secondary suturing. As a rule the results are excellent and no repair is needed at a later date. It is a mistake to deliver a head rapidly by forceps; slow traction during the pains causes little injury. If the head lies for a prolonged period on the perineum without any progress forceps should be applied. In cases of foetal distress or prolapse of the cord forceps may have to be applied earlier than would be the case under normal conditions. If a patient is having few pains and the foetal heart is regular there is no necessity for terminating the labour, even though the second stage may have lasted for some hours.

Caesarean section is advised for cases of extreme disproportion, for central placenta praevia, and where undue strain would be dangerous for the patient. In patients who have had previous stillbirths during labour, or in the case of a breech with extended legs where the pelvis is rather small, Caesarean section may be indicated. I always operate after labour has started, as not infrequently the operation has been found to be unnecessary. the more experienced the obstetrician the fewer cases of Caesarean section he has to his credit.

The Third Stage of Labour

Uterine fatigue is the most frequent cause of retained placenta. Patience and time will effect its delivery.

Passing a catheter is often of advantage; and expulsion from the vagina may be effected if a light anaesthetic is given. In normal cases it is not necessary to massage the abdomen in the third stage. Massage often causes irregular contractions and retention. It is unnecessary to explore the uterus for retained membranes; they will probably come away as involution proceeds. If the membranes do not come away naturally in a day or two and give rise to local sepsis a glycerin drain may be advisable. When the placenta reaches the vulva the hand should not touch the abdomen, as it may produce constriction of the cervix, which would prevent expulsion of the membranes. Injection of saline solution into the umbilicus in some cases effects delivery of the placenta.

Manual removal of the placenta should be avoided, except for haemorrhage or complete retention, as it is not infrequently followed by some degree of pyrexia.

Puerperal Sepsis

There is no time to do more than mention this subject. With improved methods of treatment, as, for example, with prontosil in cases of acute blood infections, surgical intervention has been much diminished. Hysterectomy has always seemed to me a mistaken method of treatment, and has been responsible no doubt for the loss of some lives. Drainage of the abdominal cavity does not seem to me a rational method in these cases, as the infection is not comparable with that of appendicular abscess or pyosalpinx. I have found serum of value in some cases; and of course fresh air, colon lavage, and blood transfusion all help towards a cure.

In local or uterine sepsis glycerin drainage is the best method of treatment.

In cases of septic abortion it is advisable not to remove the ovum or placenta when first seen, but to delay until the patient's resistance has been improved with prontosil, etc. A glycerin drain may effect the spontaneous expulsion of the ovum. If not, removal of the uterine contents by the finger or forceps is not accompanied by much risk of disseminating the organisms by breaking down the barrier in the uterine wall. A mole which gives rise to haemorrhage should, of course, be removed as soon as possible.

In conclusion, we must remember that although we are often tempted to use surgical methods in obstetrical practice time and patience will do much to banish the possible complications which we apprehend. The results of operation at the moment may be dramatic, but the dice are loaded sometimes against us in the form of shock to the patient, haemorrhage, and sepsis. Masterly inactivity may seem to many to be poor treatment, but the results will often be infinitely better than those attained by surgical intervention.

A. Alfano (*Rinasc. med.*, January 31, 1937, p. 47) states that recent studies of the extra-articular manifestations of acute articular rheumatism have induced him to record the following case. The patient was a girl aged 13, who was suddenly seized with abdominal pain, chiefly localized in the right side, constipation, vomiting, and fever. The pain in the lumbar region which subsequently developed made it doubtful as to whether the condition was a retrocolic appendicitis or suppurative peritonitis. The subsequent course of the disease made the last diagnosis appear the most probable at first, but later the occurrence of pain in the typical situation showed the true nature of the disease.

AN UNUSUAL CASE OF HERMAPHRODITISM

BY

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I put forward the details of this case as of considerable importance in having a direct bearing on the problems of sex, its origin, and manifestations.

Case Report

The patient consulted me when she was 18 years of age because she had never menstruated, though she had had frequent manifestations of sexual excitement at irregular intervals, and had become anxious as to their exact significance. Her general bearing was that of an attractive female, aware of her beauty, both of face and figure. Her voice was pitched in the female register.

On examination she was found to be a beautiful woman, remarkably well developed as far as her typically female body was concerned. The face was free from hair. Her breasts were large and full, her pubis covered with a mat of hair. Her pelvis was rounded and well developed. Her clitoris, which bore to the naked eye a strong resemblance to a small penis not fused on its ventral aspect, was conspicuous between her labia, which were fully developed and definitely larger than the average. The vagina was about one and a half inches in length and terminated in a smooth, rounded extremity, but on removal of the examining finger it collapsed so as not to seem so long as the finger had indicated. She was very active sexually, and had a lover who had frequent connexions with her, and during these she became very excited. This man, an experienced bachelor, had assured her that he was able to complete the act with great satisfaction in spite of the shortness of her vagina, and that he had never had relations with such a passionate woman. These facts are mentioned to show that she was very highly sexed. Her sexual desires were invariably directed to males; indeed, she said she had rather an antipathy to females.

Desiring to settle in life and to cease her irregular friendships with her various lovers, she consulted me again in 1921 with the object of having her "passage" elongated, and asked if it were possible to make an artificial uterus so that she might have children. On examination I could not detect any sign of the presence of a uterus. I found in each inguinal canal a smooth, rounded lump which was readily returned into the abdominal cavity by slight pressure, but appeared again when the pressure was removed. She complained that squeezing the lump caused a pain, which she herself described as sickening. I explained to her that it was possible to make an artificial "passage" for the sake of intercourse, but that it was not possible to construct a uterus from which she could bear children. I added that there was a definite risk to her life in the former procedure if carried out by the abdominal route, and she wisely decided not to undergo it. Noting the elasticity of the perineal tissue, an elastic T-bandage was devised which kept up a constant pressure on a metal dilator. This was worn during sleep and for as long a part of the day as possible. Rapidly it became possible to increase the size and length of the dilator, and the patient's persistence was rewarded by the development of a passage three inches in length which on superficial examination bore a strong resemblance to the lower end of a normal vagina.

OPERATIONS

Three years later she came to see me again because the lump in the right groin had become painful and had increased in size, and an operation for the cure of an inguinal hernia was undertaken. The lump was exposed and was manifestly a small testicle, complete in every detail, except that no vas could be found. It was replaced in the abdominal cavity and the canal closed. Two years later a similar operation

for the same reasons was performed on the left side, when, as on the previous occasion, what appeared to be an undoubted testicle was replaced in the abdominal cavity. Four years later the hernia on the right side caused her much pain and she said the lump was trying to reappear; this time she insisted on its removal. This was carried out, and the appearance of the lump at the previous operation was confirmed; it turned out to be a definite testicle complete in every detail. After its removal her sexual ardour was considerably lessened, but remained identical in its direction.

The specimen was examined after removal by Dr. Nicholson, professor of morbid histology at Guy's Hospital, and his report is appended:

"The specimen was instantly identifiable with the naked eye as a testis and epididymis. The former measured 3 cm. in length, 2.4 cm. in breadth, and 2 cm. in depth, and was covered externally by peritoneum. On section it was pinkish in colour and studded everywhere with minute granules, slightly raised above the surface. The upper pole passed gradually into the thickened head of the epididymis. Elsewhere it was surrounded by a dense tunica albuginea. The epididymis consisted of fibrous and adipose tissue with numerous small lumina.

"On microscopical examination the testis presented the typical appearance of the atrophied organ (see figure).

"The spermatic tubules were thick and consisted of a broad hyaline basement membrane surrounding a lumen in which a few degenerate cells of irregular shape were present. There were no signs whatever of spermatogenesis. The intratubular stroma was dense and non-cellular, but contained large numbers of big, intensely eosinophil interstitial cells, solitary and in groups. They often formed incomplete envelopes around the tubules, or were aggregated into definite nodules, or adenomata, the largest of which measured 1 to 2 cm. in diameter. The tubules of the epididymis were lined with columnar epithelium, on which cilia were visible. Their lumina were always empty. They were surrounded by thick fibromuscular envelopes. The vessels of the pampiniform plexus were numerous, and all their coats, more especially the media, were sclerosed. The vas deferens was not identified."

On the three occasions when the patient was anaesthetized I had taken the opportunity for a thorough examination of the pelvis, and there was no sign of any structures in the pelvic cavity which might indicate the presence of ovaries.

This case appears to me to be of great interest from several points of view. Here we have a beautiful fully developed woman, with all the physical characteristics of the so-called female, and yet she has no ovarian secretion or uterus—nor has she ever had. Clinical observation of human beings shows of course that the original division into male and female is in reality a very superficial one, and can only be maintained on the anatomical ground of the gross appearance of the external sex organs. Certain physical and mental characteristics are generally accepted as appertaining to the males and females of the species, and it is a platitude to observe that there are very few pure males or females in the human species, but that the vast majority of individuals are a mixture in varying proportions of the male and female elements. Their characteristics are usually considered to be due to the secretions of the gonads. The present case directly negatives this supposition, and proves that we must look further back for their origin. This woman had never possessed ovarian tissue at all: indeed, she had testicles.

Factors that Determine Sex

The origins of all the ultimate characteristics of the future individual are contained, of course, in the original fertilized and developing ovum, and must be derived from the original spermatozoon and ovum, which contain the factors that determine the particular type and its sex. This case shows that these factors must be independent of the gonads. Indeed the factors that determine the type of the several characteristics of a particular individual must determine also the type of the gonads that will be present in that individual.

The type of each individual is developed with the gonads and not because of them, the gonads being just one of the elements in the structure of the individual and not, as was supposed, the structures that determined the characteristics. Thus an individual may be physically very feminine, mentally a mixture of male and female, and yet have testicles or any variety of the male or female organs. The truth of this has appeared obvious to me for many years, but I have not been able to demonstrate it completely before, although it was suggested by a mass of evidence from clinical observations. The degree of development of the external sex organs varies greatly in each individual. In many females the clitoris and labia approximate quite closely in appearance to a penis and a scrotum, not of course fused in the midline. The degree of development of the male organs varies too, but what is more important to observe is that the sexual characteristics associated with these developments are just as variable, and are not commensurate with the degree or type of anatomical development. For example, great physical development is not necessarily associated with great sexual ability or desire, nor is great physical beauty necessarily associated with great sexual attraction or small anatomical development of the sex organs. This is equally true of the mental characteristics of the individual in relation to the degree of development of the sex organs and the type of gonads, the anatomical, mental, and sexual characteristics of each individual being very largely independent of one another. Indeed it appears to me simple to deduce that the superior intelligence of the female is the result of her physical disadvantages.

The value of the ovarian secretions is, then, much more superficial than is usually supposed, and this is of great interest in view of the attention drawn to them by recent work. The missing secretions in any particular individual can be augmented by the administration of artificial substitutes and important superficial changes be thereby produced, but the type of the individual is not altered. Also the ovaries have been removed surgically in a large number of women without making a radical change in the "type," though in a proportion of cases certain symptoms will follow, and some of these may attract a great deal of attention.

Sex Problems

Clinical observations have confirmed me in the belief that the pure male type and the pure female type are seldom satisfactory, the former generally being lacking

in real intelligence and the latter in physical power. The best human beings are those in whom there is a considerable admixture of the characteristics of both sexes, with an interplay of the elements, and it appears to me that for a man to be what is commonly known as "successful" he must possess a considerable amount of the mental attributes of the female, and the "successful" female must possess a considerable amount of the physical attributes of the male. The so-called "war of the sexes" is therefore about as absurd as any other war, and the question as to who fights whom, and on which side, must often be difficult to answer.

Of late years sex problems have been more openly discussed, and certain advantages have accrued from this. On the other hand types of sexual activities between persons of the same sex have been dragged into the light from the relative obscurity that previously had partially concealed them, and at times even have been exalted by certain authors to such an extent as to become a menace to society, a great deal of harm resulting. The position regarding them therefore needs some clarification. There are individuals with certain male externals who have an excessive amount of the female in them, and females with very obviously excessive amounts of the male apparent in their appearance, movements, and general mannerisms. Some of these indulge in sexual perversions, and the natural resentment that is felt against these activities is often toned down by the illusion that this is a glandular problem and so calls for sympathy and not drastic opposition. No one would justify excessive violent attacks by a male on a female because of the activity of the secretions of his sex glands. Again, it is true that the aggressive sexual female has often a great deal of the male in her, but this is not regarded as a justification for gross sexual activities on her part. The case to which I have referred in detail shows that it is possible for an individual to have a very considerable mix-up of elements and yet confine "her" sexual activities entirely and successfully to the "opposite" sex.

The causative factors of homosexuality and Lesbianism are not to be found, therefore, so much in the secretions of the gonads as in the type of the individuals concerned. Their behaviour should not be regarded as justifiable on the ground of these glandular secretions, nor should it be held that it is impossible for them to learn and cultivate an adequate control. In this matter the legal and medical professions are often found at variance and are often led away from the main issue, the former being more interested in upholding "the majesty of the law," and the latter in attempting to find a cause for the behaviour and to supply a suitable remedy. It is just as possible for the participants in these practices to learn control as it is possible to control any other bodily desires, normal or abnormal. It is vital that they should be made to realize that their practices are not excusable on the grounds of the secretions of the sex glands, as, failing this, they are dealt with drastically by the law—and justly so—for the obvious benefit of the herd in which we live.

The December issue of *Medical Life* is an Army Medical Library number commemorating the centenary of the foundation of the Army Medical Library at Washington. In addition to other papers, it contains greetings from the Royal Society, the oration delivered on the occasion by Sir Humphry Rolleston (of which an abridged version appeared in our issue of November 28, 1936), and a portrait of the late medical historian, Colonel Fielding Hudson Garrison.

DERMATITIS ARTEFACTA: A NOTE ON AN UNUSUAL CASE

BY

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The term "dermatitis artefacta" is reserved for those cutaneous lesions which are produced by the patients themselves with intent to deceive. It does not therefore include the group of self-inflicted dermatoses known as neurotic excoriations in which the patients neither intend nor practise deception but are the victims of an irresistible desire to pick, scratch, or otherwise injure the skin, nails, or hair (trichotillomania); this impulse in some instances may have originated in a pre-existing or existing true dermatosis, such as scabies or acne (Brocq's *acne excoriée des jeunes filles*). Such cases are quite distinct clinically and psychopathologically from the group of "feigned" eruptions to which the ensuing remarks are confined and of which the case reported is an example.

Diagnosis

Dermatitis artefacta is by no means a rare condition, but to anyone who has not previously encountered it the possibility that he is dealing with a self-produced dermatosis might not easily come to mind, and it is probable that a number of cases, especially of the milder type, are missed.

The diagnosis may be comparatively obvious or extremely difficult. The subjects may be men or women, but the great majority are women. They are usually young—between 15 and 25 years of age. There may be nothing in their past histories suggestive of any psychological abnormality, and they are not the type of person commonly called "nervous"; on the contrary, they often present a curiously unemotional, almost indifferent, attitude on examination, which is reflected in their facial expression to such a degree that their physiognomy, though difficult to describe, may be quite distinctive and of valuable help in diagnosis. This apathy, if it may be so called, is neither to their environment nor to their interrogator. They are often intelligent, perhaps above the average, and answer questions with apparent frankness, though they do not care to volunteer much information concerning themselves or their condition. Their apathy is only towards their disease, and in this direction their lack of interest is so unnatural as to be striking. They rarely complain, and may regard a number of heavily infected discharging lesions with what appears to be almost a complaisant and contented eye.

The lesions themselves present great variety in shape, size, and character, as would be expected from their aetiology. They may be linear, striped, band-like, disk-shaped, or have a fantastic outline. They are constant only in one particular—that they do not conform to the lesions of any recognized dermatosis. Their border is important; it is usually sharply defined, pointed, or angular, and may have a thin line of erythema between it and the surrounding skin, which is probably quite healthy. If a liquid agent has been used there may be one or more drop-shaped or streak-shaped subsidiary lesions, caused by spilling or running. The location of the lesions is important. They naturally occur in places easily accessible to the hand: the left arm and side of the body are therefore favourite sites, but the face or neck,

buttock or legs, may be chosen. The lesions have a habit of appearing, multiplying, or relapsing during the course of a night, and are not preceded by any local cutaneous disturbance. The distribution may be totally unsymmetrical or impossibly symmetrical.

The agents employed to produce these lesions are also of great variety: they may be chemicals, such as carbolic or sulphuric acid, silver nitrate, caustic soda, or lysol; all kinds of instruments, such as knives, forks, brushes, etc.; or simply the finger-nails or manual rubbing or pinching. The character of the lesions themselves consequently varies according to the type of agent used. Anything may be encountered from simple erythema to extensive tissue destruction. The superaddition of pyogenic infection further complicates their nature and appearance, and the infected lesions may be particularly difficult to identify.

Most perplexing, however, is the psychopathogenesis. It is true that in a certain number of the cases the motive appears to be to excite sympathy, to evade work, or to secure compensation, but even in these patients, as Goldsmith (1936) points out, the fact that the method chosen of achieving the purpose is a false one, and that the self-produced illness is usually out of proportion to the often trifling advantage gained, makes manifest the existence of a specific psychic abnormality. There are, moreover, many cases in which it is impossible to define a motive of any kind.

The following case report of a patient recently under my observation, although an extreme example of the condition, illustrates some of the points mentioned concerning difficulty both in diagnosis and in definition of motive.

Case Report

The patient was an unmarried woman, 31 years of age. Apart from tonsillectomy and appendicectomy she had been healthy until the age of 22. She stated that all her life she had occasionally suffered from chilblains, and had had "numb feelings" in her fingers. There was nothing noteworthy in her family history.

HISTORY

About nine years previously, while she was training as a nurse, a small lesion like a chilblain appeared at the extremity of her left little finger. It rapidly became black and began to extend. Amputation was performed at the distal interphalangeal joint. The wound healed normally and remained healthy. A few weeks later, however, a similar area of dry gangrene began around the nail of the left ring finger. The patient was then admitted to hospital in London, where a diagnosis of Raynaud's disease was made. Alcohol was injected into the tunica adventitia of the left brachial artery. It also became necessary to deal with the affected finger by amputation, although there had apparently been some improvement in the lesion following the injection. She was discharged from hospital about ten days later.

After a few months, however, a new patch of gangrene appeared; this time the left middle finger was affected. Amputation was again resorted to owing to signs of rapid extension of the gangrene. From then on similar lesions continued to develop at intervals of six to seven weeks, the scar of the latest operation often being the site of the new gangrene. The disease was confined to the left upper limb. The succession of amputations (some thirty-three in all) resulted in the complete removal of the arm up to the glenoid fossa of the scapula. The operation of left cervical sympathectomy was also performed. During the intervals between operations the patient stated that she had felt perfectly well, except for spasms of pain in the stump, for which she had received injections of heroin. Whenever she was not in hospital she pursued a normal life, and kept up her swimming, badminton, and other exercises. The last of this series of operations had taken place about three weeks before I saw her.

She was a pleasant-looking intelligent girl, apparently in the best of health. There was an operation wound at the shoulder, practically healed; otherwise nothing abnormal, physical or mental, could be discovered. She stated that she had come to London for some manipulative treatment to her neck as a last chance of curing her complaint. She was very cheerful—remarkably so when one considered the ordeals she had suffered during the past nine years and the imminent possibility of the development of yet another patch of gangrene. She spoke of this being likely to appear in about three weeks' time, which would make an interval of some six weeks after the last operation, this being the interval she had become accustomed to expect. As, however, there was now nothing remaining of her left arm that could be amputated, she did not quite know what would happen to her should the gangrene reappear at the shoulder, and presumed that if it did she would die. She made no complaint, hoping for the best from the new treatment, and impressed one as being an extremely brave girl.

TREATMENT

A few days after beginning treatment, which apparently consisted merely in light massage to the neck, she was found in a faint outside her bedroom. She could not remember what had happened, but stated that she had had similar attacks during the past few years for no obvious reason. She also developed retention of urine, and required catheterization. This, too, had happened a number of times previously, sometimes when she had been in hospital. A few days later an attack of aphonia came on and lasted five days. She then said that she often lost her voice: one attack had persisted for ten weeks. She also mentioned that she was subject to sleep-walking.

After a short rest following the fainting attack she resumed massage for about a week, and then came an urgent message to see her. She was rolling about in convulsions of pain, and a new patch of gangrene had appeared. Morphine had to be given, and later that day several injections of heroin, which, though they quieted her to some extent, seemed to have little effect on the spasms of pain. On examination there was a circular gangrenous-looking area about the size of half a crown in the middle of the operation scar. The epidermis was unbroken. In the centre it was black, but paled gradually towards the periphery. The edge was sharply demarcated by a thin zone of erythema from the surrounding skin, which was normal and healthy. To one side of this lesion was another, of a curious shape and character: it was a small triangle, of which the border only was erythematous. There was also a third tiny nondescript erythematous lesion.

A diagnosis of artefact was made, and the following day the patient was admitted to hospital. She was most unwilling to go, but was persuaded by her father, who had been sent for from the country. On admission her right arm was immediately put up in a splint to prevent possible interference. The gangrenous-looking area began to diminish without treatment of any kind. From the moment of arrival at hospital she did not complain of pain, and it was difficult to believe that only a few hours earlier she had urgently needed heroin. By the end of a week the principal lesion had resolved considerably and the small erythematous ones had vanished. She then left hospital.

Commentary

This case presents the remarkable picture of a self-inflicted dermatosis maintained intermittently over a period of nine years, and achieving so successful a deception both in London and the provinces as to result in the piecemeal removal of an entire limb. The evidence leaves no reasonable doubt as to the diagnosis: recurring areas of dry gangrene confined to one arm and affecting the skin only (at operation the underlying tissues were found to be normal) do not conform with the lesions of any recognized disease; the peculiar nature of the latest lesions

themselves and their spontaneous resolution when interference was prevented; the characteristic mental attitude of the patient; and the occurrence of other psychopathogenic manifestations, such as aphonia, retention of urine, somnambulism, and fainting attacks, all indicate the diagnosis of artefact of hysterical origin. That the deception should have been practised with such drastic effect is striking but by no means unique. According to Eller (1929), many cases have been cited in the European literature of amputations of one or more limbs having been performed on patients presenting large areas of gangrene of "idiopathic" origin, which subsequently were proved to be due to the application of caustics by the patients. Simpson (1917) refers to a case recorded by Heidingsfeld of a woman who had serenely permitted the complete amputation of both breasts and one leg, and had given consent for the removal of an arm, before her condition was recognized. The lesions were those of gangrenous dermatitis and had been variously diagnosed as syphilis, tuberculosis, and malignancy. In addition to the operations she had received intensive salvarsan therapy.

Another extreme case, reported in the *Presse Médicale* (June 10, 1908), was of a man of 30, who produced black gangrenous patches on his arm with caustic potash. He consulted fifteen doctors in turn, and preserved their names, addresses, and diagnoses, which had included those of trophic lesions, neuritis, myelitis, syphilis, and tubercle. He had received a variety of treatment, including stretching of the brachial plexus. Finally, amputation of the arm was performed. The other arm then became affected, after which his condition was recognized and apparently he was cured by psychotherapy. Lancashire (1922), who alludes to this case, cites one under his own observation of a young lady, a musician, who repeatedly developed lesions on her face and neck on the days when she was engaged to appear at a concert. It was impossible to define a motive, and she privately confessed that some uncontrollable impulse made her mutilate herself in this manner on the very day when to do so would prove most disastrous for her. Of the milder type of case, more generally encountered, an instructive example was reported by Gardiner (1930). The patient was a woman of 26, who suffered from a bullous eruption of the chin, neck, and sternum. Even after admission to hospital the lesions continued to appear, until it was discovered that the patient was producing them herself in the bathroom by means of fly blisters, which were found concealed in her handkerchief. Fly blisters were also found in the bed she had vacated at home.

"Belle Indifference"

It seems certain that a number of these patients are hysterical. The peculiarly calm mental attitude, previously mentioned as being so often met with in subjects of dermatitis artefacta, is apparently a characteristic feature of hysteria and was described by Janet as *belle indifférence*. This attitude can be understood when it is realized that hysteria is a special type of reaction to difficulties; that the physical symptoms represent the solution of some problem of everyday adaptation; and that they are misinterpreted by the patient's consciousness (Henderson and Gillespie, 1936). In the present case this *belle indifférence* was very striking, as also were other hysterical stigmata, such as aphonia, retention of urine, and fainting attacks. A further question of great interest is that of dual personality. May hysterical subjects produce their lesions and not be conscious afterwards of having done so? Devine (1933) states that it is not necessary to suppose that the hysteric is aware that his symptoms originate in his imagination, and that, even in the case of self-inflicted lesions, it would seem that his capacity for self-deception blinds him as to their origin. Dore (1926) reported the case of a girl of 19 with lesions on her arms. Stoddart considered her case to be one of dual personality, the patient being unaware that she produced the eruption herself. O'Donovan (1927) also inclines to the view that the patients possess a double personality, on which account it is practically useless confronting them with their misbehaviour. MacCormac (1926) wrote to some patients who had been treated at the Middlesex Hospital and found that of five who responded one had either forgotten that she had produced the lesions herself or was unaware of having done so, as she inquired whether the skin condition was liable to recur now that she was married, and if it would have any effect on her future children; another patient seemed to have no recollection whatever of her dermatosis, and stated that she had never been in the Middlesex Hospital. Simpson (1917) also remarks that one of his cases had apparently forgotten that she had consulted him previously with the same condition, although on that occasion he had informed her that he knew she was producing the eruption herself. MacCormac believed that the explanation lay in the habit of burying the memory of unpleasant events in the subconscious mind rather than in the theory of double personality.

These and other perplexing questions concerning the psychopathogenesis of dermatitis artefacta can be clarified only by co-operation between dermatologist and psychologist in a series of cases.

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C. Spampinato (*Policlinico*, Sez. Chir., February 15, 1937, p. 95) has collected 130 cases, of which four are original, of dislocations of the cervical vertebrae, exclusive of the atlas, which he classifies as follows: (1) complete dislocations; (2) subluxations; (3) unilateral; (4) bilateral; (5) forward dislocations; (6) backward dislocations; (7) dislocation of a single vertebra; (8) multiple dislocations; (9) pure dislocation; (10) fracture-dislocation. In eighty-eight out of 122 dislocations there was no spinal paralysis, while in twenty-four the dislocations were complicated by paralysis. Among 102 cases in which the dislocated vertebra was identified the fifth came first (40 per cent.) and then in order of frequency the fourth (21 per cent.), sixth (14 per cent.), third (12 per cent.), second (11 per cent.) and seventh (5 per cent.). As regards treatment, in cervical dislocation without spinal symptoms, if the patient is seen at once, reduction under general anaesthesia should be tried, but if this is not successful continuous extension should be employed. If the dislocation is accompanied by spinal symptoms reduction should be first tried, but if this fails, operative or expectant treatment should be carried out. In some severe dislocations that cannot be reduced without operation spontaneous improvement resulting in complete recovery may ensue.

IMMUNIZATION AGAINST DIPHTHERIA WITH ALUM-PRECIPITATED TOXOID

EFFICIENCY, DURATION, AND GRADE OF IMMUNITY

BY

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I have reported previously the results of Schick tests on 162 children about two months after 0.4 c.cm. of alum-precipitated toxoid injected three to four weeks after an initial dose of 0.1 or 0.2 c.cm. (Chesney, 1936). Only one child was positive, giving a conversion rate of virtually 100 per cent. Using a similar two-dose method Parish (1936), in 164 children, obtained equally satisfactory results.

Efficiency

The majority of children immunized in Poole (population 67,000) have belonged to the middle and lower classes. A severe epidemic of diphtheria occurred in 1929-30, but the attack rate has now dropped to a low level in comparison with the figures for London and for England and Wales.

Diphtheria Attack Rate per 1,000 Population

	1929	1930	1931	1932	1933	1934	1935	1936
Poole	4.25	3.25	1.51	0.94	0.19	0.14	0.27	0.29
London	2.68	3.03	1.95	1.88	2.25	2.81	2.25	—
England and Wales ...	1.59	1.84	1.26	1.08	1.18	1.70	1.60	—

The processes of natural immunization have lately been minimal. During the last three years nose and throat swabs from 500 children, who had incidentally some local abnormality, did not reveal a single positive culture. The Schick-positive rate on primary tests, mostly of children over 10 years of age, has been high; from 1930 to 1936 it was 75.8 per cent. of 1,125 children, and in 1936 78.6 per cent. of 210 children. At present the rate for all children under 10 years is probably 80 per cent. or higher.

Since my former report in February, 1936, a further 1,038 children have been immunized, making a total of 1,200 children immunized with the two-small-dose method. Of these, 1,078 have been Schick-tested two months after the second dose, and only two children have shown a Schick-positive reaction. The efficiency of immunization is therefore approximately 100 per cent.

Duration of Immunity

One hundred and twelve children who had been immunized with two small doses of A.P.T. and found Schick-negative when tested two months later were again tested eighteen months or more after the previous test; all were still negative. This result is the more significant, for in 80 per cent. of these children the "fourfold" Schick toxin test was used (see later).

Grade of Immunity Reached

I was interested to inquire whether the method of immunization in use converted children previously Schick-positive to the "just-negative" condition or to a higher level. I therefore used "fourfold" Schick toxin (kindly placed at my disposal by the Wellcome Physiological Research Laboratories). Glenny and Waddington (1929) showed that "multiple Schick dilutions" could be used to test for a higher grade of immunity than the standard dilution. A child who is negative to the "fourfold" dilution has a higher level of antitoxin per c.cm. than one who is just negative to the standard but positive to the "fourfold" dilution. Five hundred and sixty-four children were tested with the "fourfold," and 514 with the standard dilution. Only two positive reactors were found in the whole group, and both were positive in the ordinary Schick test. The blood of one of them was tested by the kindness of the staff of the Wellcome Physiological Research Laboratories, and 1/50 of a unit of antitoxin per c.cm. was found.

I have also reported the results of Schick-testing 127 children who had been immunized with formol toxoid; of ninety-four tested with the "fourfold" Schick dilution 87.3 per cent. were negative and 12.7 per cent. were positive, whereas of thirty-three children tested with the standard Schick dilution 97 per cent. were negative and 3 per cent. were positive. In forty-five cases the two tests were used simultaneously, and forty children were negative to both strengths, four were negative to the standard and positive to the "fourfold," and one was positive to both standard and "fourfold" (Chesney, 1935).

With A.P.T. the Schick-negative rate was consistently high with both the standard Schick toxin test and the "fourfold," and the results suggest that A.P.T. gives a higher level of immunity than formol toxoid.

Reactions of Immunizing Injections

No material difficulties have been encountered in the work. Following the initial "detector" dose of 0.1 c.cm., 3 per cent. of the children showed mild local reaction; only 0.1 c.cm. or 0.2 c.cm. was therefore injected into those subjects as the second dose. By this procedure severe local reactions were avoided. In four children who gave a history of a blow on the arm during vigorous games a slight swelling formed eight to twelve days after the second dose, from which a small amount of sterile discharge was easily evacuated. Subsequently the lesions healed rapidly.

Conclusion

Alum-precipitated toxoid used in two doses of 0.2 c.cm. and 0.4 c.cm. at an interval of four weeks gives a high level of Schick immunity. The initial small dose, acting as a detector of hypersensitive persons, eliminates reaction difficulties. The high Schick-negative rate obtained obviates the necessity for routine Schick-testing after immunization.

Summary

1. Of 1,200 children immunized with A.P.T.—0.1 or 0.2 c.cm. followed by 0.4 c.cm. four weeks later—1,078 were available for retest two months later. In only two children was the Schick test positive. The immunizing efficiency of the prophylactic, therefore, approached 100 per cent.

2. The grade of immunity reached was high, for over 99 per cent. of the children tested with the "fourfold" Schick dilution were negative to this test.

3. One hundred and twelve children who had been negative two months after immunization were retested eighteen months later; all were negative.

4. Reactions immediately after injection caused no material trouble and no interference with work. Small local lesions formed eight to twelve days after injection in four children who had received knocks on the arm in vigorous play; the slight discharge was sterile and disappeared rapidly.

My grateful acknowledgements are due to Dr. R. A. O'Brien and his colleague Dr. H. J. Parish for supplies of test

materials and valuable advice and assistance, and to Dr. R. J. Maule Horne for helpful facilities and co-operation in this work.

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TREATMENT OF HAY FEVER BY INTRANASAL ZINC IONIZATION

PRELIMINARY REPORT OF 243 CASES

BY

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In 1936 the opportunity occurred at St. George's Hospital of treating a number of cases of vasomotor rhinorrhoea by intranasal zinc ionization. Owing to the number of applications for treatment received (over 2,000) it was realized that the normal staff of the physiotherapy department would be unable to deal with more than a small fraction of these cases. Four special hay fever clinics were therefore set up and the services of five extra assistants accepted in order that a rapid statistical study of the method might be made. We desire to record our thanks to these voluntary workers for their invaluable assistance and to the Medical Committee for permission to establish the clinics.

During the period under survey 243 cases were treated; these were of both sexes, and the ages ranged from 5 to 77 years. A special analysis of 100 cases showed that 88 per cent. were of the seasonal type; 12 per cent. were of the non-seasonal variety and presented symptoms of varying severity throughout the twelve months. In only one case of seasonal vasomotor rhinorrhoea was there failure to give a considerable measure of relief; the only complete failures met with were in non-seasonal cases of long standing.

It should be emphasized that the figures in this paper and the conclusions drawn apply to the 1936 season after treatment earlier in the year. By "complete relief of all symptoms" is not meant "cure" of the disease, and in fact arrangements have been made for the cases already treated to have at least two applications in 1937.

In the present series the patient was first examined for infection of the paranasal sinuses, septic tonsils, dental sepsis, or gross structural abnormality of the upper respiratory passages. Intranasal ionization was not given until these, if present, had been dealt with. The routine practice was to give three treatments at intervals of one week; a few cases required as many as five applications; some were completely free after one. As a general rule the treatment was not given unless there was a chance of shortening the subject's season by at least four weeks.

In no case in the series was any anxiety caused by the primary or secondary reaction. There were no complications such as acute sinusitis, anosmia, otitis media, or extensive sloughing of the nasal mucosa. One case of mild cocaine idiosyncrasy was encountered.

No other treatment for the condition was given except that in a few cases where the secondary reaction was more marked than usual ephedrine, 1/2 grain, and "sedobrol," 2 tablets, were ordered that night. No sprays, douches, or local applications were prescribed, and the patient was asked to omit these if already in use.

It should be stated that the great majority of cases had had other treatment in previous years without relief, and from the fact that the average duration of symptoms was eleven years it will be realized that the condition was in most instances well established. Previous treatment took the form of desensitizing injections, injections of peptone, local applications, dietetic restrictions, and operations such as submucous resection, ethmoidectomy, antrostomy, etc. In many instances the patient had had more than one of the above methods applied without improvement.

Details of the technique employed are not included here as they have already been published.[1]

The following table shows the results obtained:

Complete relief of all symptoms ...	57.6%	93.6%
Considerable relief	36.0%	
Some improvement	5.0%	
No improvement	1.4%	

Conclusions

1. The technique employed is safe, and complications are not met with.

2. The method gives a satisfactory result in the great majority of cases of seasonal vasomotor rhinorrhoea, and in many cases of the non-seasonal type.

3. The treatment frequently gives relief when other methods have failed.

It is hoped in due course to publish a "follow-up" of these cases, and to record any remote after-effects.

REFERENCE

[1] *Practitioner*, May, 1936.

Clinical Memoranda

Thrombosis of Subclavian Vein Complicating Hyperthyroidism

The following case is of interest since venous thrombosis is a rare complication of thyrotoxicosis.

A single woman, aged 47, who was employed as a sewing machine operative, first consulted her doctor on May 30, 1936. She had been at work until a few days before this, but stated that for twelve months she had suffered from attacks of palpitation and dyspnoea on exertion. She had lost weight and more recently had sweated excessively. She admitted that she was unduly nervous, and that her limbs trembled. When seen by her doctor the pulse rate was irregular—200 per minute—and the thyroid was slightly enlarged. There was no definite exophthalmos. She was kept in bed on bromide and digitalis therapy for three weeks. The rate fell to 180 but was still irregular. On June 23 she was admitted to St. James's Hospital, Leeds.

She was grossly thyrotoxic. The pulse was 144 and irregular (fibrillating), the temperature was 97° F., and the respiration ranged between 24 and 36. The veins of the neck were overfilled. The apex beat was just inside the mid-clavicular line, though the heart was overacting grossly. The liver was palpable. There were moist sounds over the right lower lobe. The thyroid was soft and slightly enlarged. There was a fine tremor of the hands, and a trace of albumin was found in the urine.

On the morning of June 30, seven days after her admission to hospital, she awoke to find the whole of her right arm swollen and blue. She complained of aching pains along the inner side of the arm and forearm. Although the patient was

right-handed, she did not remember performing any unusual movements involving abduction of the right arm. There was pitting on pressure. The radial pulse was alike on each side. The veins over the anterior and posterior folds were dilated. The lower half of the internal jugular, the external jugular, and the axillary veins could be felt as solid tender cords. The temperature remained normal, except on the evening of the eighth day, when it rose to 98.6° F. There was no evidence of trauma or constriction of the arm by her nightdress sleeve. No focus of infection was found. All the teeth had been removed some ten years previously. The tonsils looked normal, and there was no sore throat. A throat swab disclosed nothing of note. There were no septic abrasions of the skin, and no vaginal discharge. The urine contained a trace of albumin, but no pus. There was no discharge from the ears. The *x*-ray examination revealed no sign of cervical rib, root abscess, or suppuration in the nasal sinuses. The Wassermann reaction was negative. There were one or two old calcified glands on both sides of the neck.

The arm was elevated on pillows, and pressure was applied by alternate layers of wool and flannel bandages. She was given Lugol's iodine, 10 minims three times a day, and improved dramatically. The pulse rate began to fall within forty-eight hours, and in fourteen days was 72 and regular. Concurrently the pain in the arm disappeared and the swelling gradually subsided. On July 30 a subtotal thyroidectomy was performed by Mr. G. Armitage. The patient's convalescence was uneventful. Her condition improved rapidly, and she was discharged from hospital on August 22.

On December 8 she was seen again. She had gained 18 lb. in weight, but her pulse rate was again 136. There was still a slight tremor of the hands, and she still complained of periodic mild attacks of palpitation on exertion. When she had been using her right arm more than usual she had noticed some swelling of the upper arm and on the back of the hand. On examination of the right arm no oedema was seen; there were no dilated veins, and the temperature and the colour of the skin were normal. Measurements revealed that on the right side the upper arm was 1½ in., and the forearm 1 in., greater in circumference than the corresponding measures on the left side.

At the time of writing—January, 1937—there is still a little swelling of the right arm, but this is diminishing. The difference in circumference is 3/4 in. in the upper arm and 3/4 in. in the lower arm. Apart from this she is quite well and anxious to return to work. The pulse rate is 72 and regular, and the heart is normal in appearance on *x*-ray examination. The urine contains no abnormal constituent.

In a search through the literature we have found no mention of venous thrombosis complicating thyrotoxicosis. In view of the increase in the circulatory rate in the latter condition we feel that this occurrence must be one of considerable rarity.

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Serum Treatment of Tetanus

The following case of tetanus in a young child, treated with massive doses of serum, may be of interest. While it is fully realized that when the incubation period is longer than ten days the prognosis is good, regardless of serum treatment, yet there are one or two features about the case which may be of sufficient interest to merit its publication. The diagnosis in this case is in no doubt, but the incubation period is unfortunately unknown.

CASE RECORD

A boy, aged 2 years and 10 months, who lived on a pig farm, was brought to the out-patient department on November 4, 1936, because for the past twenty-four hours he had been able to open his mouth only partially. No cause could be found for this. There was no history of trauma or of previous illness, apart from measles in 1935. When seen the following day his condition was about the same, but after his return home he suddenly had an attack lasting two or three minutes in which the teeth were clenched on the tongue, the head was retracted, and the arms and legs became extended and rigid. On November 6 he had two similar attacks, and he was admitted to the hospital shortly afterwards.

On admission the child showed the typical risus sardonicus. The masseters were in spasm and the mouth could not be opened actively or passively. The head was somewhat retracted and the neck muscles felt very rigid. The knees were spastic, but all the other joints were quite free. All reflexes were brisk. The fundi were normal. The temperature was 98.8° and the pulse rate was 112. Tetanus having been diagnosed, careful search was made for the initial lesion. The only abrasion found was a small scratch on the left cheek, which was imperfectly healed and appeared to contain some dirt. The parents stated that it had been present about two months and had persistently refused to heal.

Anti-tetanic serum was given as follows: November 6, 5,000 units intravenously; 7, 15,000 units intravenously, 5,000 units intramuscularly, and 20,000 units intrathecally; 8, 25,000 units intravenously and 15,000 units intramuscularly; 9, 20,000 units intravenously; 10, 20,000 units intramuscularly; 11, 20,000 units intravenously; 12, 20,000 units intramuscularly; 13, 20,000 units intravenously; and 16, 20,000 units intramuscularly. The total doses were: intravenous, 105,000 units; intramuscular, 80,000 units; intrathecal, 20,000 units, the whole amounting to 205,000 units. The cerebrospinal fluid obtained on November 7 showed no abnormality. The serum caused no constitutional disturbance apart from a slight rash on one occasion. The lesion on the face was treated by scraping, followed by application of pure carbolic acid. Chloral and bromide were given as required at first, and later regularly every four hours. On several occasions the tongue became caught between the teeth, and had to be released by administration of chloroform. Three days after admission, when attacks were occurring very frequently, 1.2 c.cm. of avertin was given with very good effect.

As these attacks became less frequent the condition of the mouth and lungs gave cause for great anxiety. The mouth became extremely septic, and there were marked signs of pulmonary congestion. The mouth was cleaned on each occasion when an anaesthetic was given, and soon became normal when the child was able to take solid food. The pulmonary signs, which were treated by the exhibition of atropine, cleared up very satisfactorily. By November 21 the child could open his mouth and put his tongue out, but the neck rigidity did not disappear completely until the beginning of December, by which time recovery was complete. He was discharged on December 11. He attended a hospital children's party after Christmas and was observed to be in excellent health. The lesion on the cheek had healed completely, leaving practically no scar.

Apart from the fact of the child's recovery, it is of interest to note that no untoward symptoms followed the therapeutic use of this large dosage of serum in a child of this age and weighing only 26 lb., and also that the employment of avertin was of great value.

I wish to thank Dr. N. H. Watson, under whose care the child was admitted, and Dr. Kenneth Tallerman, who saw the case in consultation, for their kind permission to publish this note, and for the help and advice which they have given me.

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The French Ministries of Public Health and Physical Education have addressed to the prefects in France a circular in which they are urged to do all in their power to aid the Société de Prophylaxie Sanitaire et Morale in its educational programme relative to the venereal diseases. The prefects are requested to bring their influence to bear on sporting clubs in order that their leaders may give their support to the society in question.

Reviews

BRIGHT ON BRIGHT'S DISEASE

Original Papers of Richard Bright on Renal Disease. Edited by A. Arnold Osman, D.S.C., F.R.C.P. (Pp. 172; illustrated. 21s.) London: H. Milford, Oxford University Press. 1937.

By reproducing the four original papers of Richard Bright, with their beautiful coloured plates of the naked-eye appearances of the affected kidneys, Dr. Arnold Osman has piously rendered a useful service in making readily accessible these classical writings so long out of print. Further, this welcome volume supplements Sir William Hale-White's full account of Bright's life and works, which, originally published in the *Guy's Hospital Reports* for 1921, was partially reproduced there in July, 1927, at the time of the centenary celebration of the appearance of the first of Bright's two volumes of *Reports of Medical Cases*, when the late Professor W. S. Thayer of Baltimore delivered on July 8 the address on "Richard Bright: the Man and the Physician."

The four papers now presented to the reader date from 1927; in 1833 Bright gave the Goulstonian Lectures at the Royal College of Physicians of London, the part of the second lecture, devoted to kidney disease, being reproduced here. The other two articles appeared in the first volume of the *Guy's Hospital Reports* (1836), and gave the most comprehensive account of the disease which has so long borne his name.

In an appropriate appendix Dr. Osman introduces a new feature—namely, an account of histological sections made from three kidneys of cases recorded in Bright's original series of cases. These kidneys, in the museum of the hospital, had not been previously thus examined, and now, though difficulties were encountered in staining specimens a century old, the histological changes are described, just as some years ago the original cases of Hodgkin's disease were submitted to what may be called "palaeo-histological examination." It is said that in 1842 Bright and his pupil George Robinson examined kidneys by the microscope, but never reported thereon. This is hardly surprising, for it was long before thin sections were cut, the preparation for microscopy consisting of teasing out the tissues.

EYE, EAR, NOSE, AND THROAT

The Practitioners' Library of Medicine and Surgery. Vol. 11. *Eye, Ear, Nose and Throat.* (Pp. 1,153; illustrated. Sold only in sets, £2 10s. per vol.) New York and London: D. Appleton-Century Co. 1937.

The 1936 Year Book of the Eye, Ear, Nose and Throat. Pp. 632; 87 figures. 2.50 dollars or 10s. 6d., postage 6d.) Chicago: Year Book Publishers Inc.; London: H. K. Lewis and Co. 1936.

The first of these two recent publications forms one of a series which is intended to present the whole of medicine and surgery in a manner suited to the needs of general practice. The associate editors for volume 11 are Dr. Arthur M. Yudkin for ophthalmology and Dr. Paul B. MacCready for oto-laryngology. Such a large number of contributors take part in the construction of the book that some lack of uniformity is to be expected, and this applies with special force to the descriptions of operative technique. Some operations, such as extirpation of the lachrymal sac, are described and illustrated in great detail, while others, for which a practitioner is more likely to become responsible (for example, the ordinary mastoid operations) receive much less description and are not illustrated. There are also articles which are not likely to make much appeal to the general practitioner, such as those on the histopathology of the middle ear and the physiology of the internal ear, valuable as they would be in a book with comprehensive aims.

The first part is devoted to the eye, and provides in systematic fashion a full account of every subject for which the book is likely to be consulted. This part impresses itself as superior both in arrangement and content to the later parts and is admirably illustrated, with even distribution of the pictures. It is not possible to mention more than a few, but the chapters on diseases of the uveal tract by Gifford, the crystalline lens by Kirby, the retina by Yudkin, and glaucoma by Yudkin are particularly good, and this third of the book, which is well documented, might serve as a textbook of ophthalmology.

The second part is devoted to the ear. This consists rather of a number of interesting essays on subjects in which the various writers are experts than of a systematic account of diseases of the ear. All these chapters appear well arranged if the titles only are considered, but an examination of the contents shows overlapping and a want of recognition of relative importance. The complications of suppurative otitis by MacCready, for instance, is a good but condensed account, lacking illustrations, and quite out of proportion in length to the detailed articles on academic and scientific subjects.

Part III deals with diseases of the nose, nasopharynx, and sinuses. There is again overlapping in the first two chapters on physiology, and the illustrations in the chapters on the accessory sinuses are old-fashioned. The most satisfactory chapter is on fractures of the nasal and malar bones by Kazanjian. Part IV is concerned with diseases of the pharynx. The chapter on the tonsils by MacCready gives a sufficient account, but it cannot escape comment that there are no proper illustrations of the operation of removing the tonsils by dissection. Part V deals briefly with diseases of the larynx, and includes an excellent short account of bronchoscopy by Clerf.

The supervising editor says in his preface that he has turned to the comparatively younger group of American investigators for the newer material, and that the volume is therefore not a rehash of pre-existing material found in the older textbooks. In the section on the eye the material is certainly presented in the form desired, but in the remaining four sections young America displays, on the whole, a remarkable adherence to traditional conservatism.

The 1936 issue of the *Year Book of the Eye, Ear, Nose and Throat* fully maintains the excellent standard already set up by the editors of this publication. In the first part, concerned with the eye, will be found abstracts of papers dealing with the technique of operations for cataract and glaucoma, with illustrations. There is also an account of interesting experimental researches on the production of papilloedema and of chemical and anatomical studies on the pathology and pathogenesis of choked disk. The papers on acute bilateral retrobulbar neuritis treated by operations on the sphenoidal sinus and on acetylcholine in tobacco amblyopia are of practical importance. Two of the longest abstracts are of a study of optic nerve atrophy in relation to pituitary tumour, and of the diagnosis of brain tumour.

In the section on the ear there is a good abstract of a paper by Lund, which is likely to become classical, on the indications for labyrinthine operations, showing the importance of a study of the cerebro-spinal fluid. There

is also an interesting paper on neoplasms of the middle ear, from which it appears that five out of six patients treated in the manner recommended had no recurrence from two to more than four years. Tuberculosis of the ear has received attention, and also a paper by Lüscher describing otomicroscopy. A collection of papers on the fashionable subject of petrositis is also summarized and illustrated. There is also an account of an ingenious explanation of neuralgias and ear symptoms associated with distorted functions of the temporo-mandibular joint and how relief may be given. The curious observations of Guild on shortened bone conduction in old age are described by the editor as startling but logical.

There are abstracts also of a varied collection of papers on the nose, mouth, and throat, including also bronchoscopy and gastroscopy. Most of these papers contain little that is novel, and are confirmatory of previous observation and methods. The paper by Madrnka and Bardet of Geneva on acute pulmonary tuberculosis following radiotherapy of pharyngolaryngeal cancer is an exception, and is of great importance, as the authors found that in 43 per cent. of forty-two patients acute pulmonary tuberculosis proved fatal in two to three months.

There is a good index of subjects and another of authors. The compilation shows excellent judgement in selection and is an admirable book of reference.

X-RAY DIAGNOSIS

A Manual of Radiological Diagnosis for Students and General Practitioners. By Ivan C. C. Tchaperoff, M.A., M.D., D.M.R.E. (Pp. 256; 286 plates. 21s.) Cambridge: Heffer and Sons. 1937.

A concise guide to the salient points in *x*-ray diagnosis has long been needed, and Dr. Tchaperoff has set himself the difficult task of filling the gap. For this he is well equipped, for he has the gift of orderliness, and ranges his material in a systematic way, curtailing verbiage, so that he covers the whole vast field in a book of only 250 pages that also include 280 illustrations. This in itself is no mean feat, but when we examine the material that is so compressed we find very little omitted that is of importance and many things included which we would hardly expect in so condensed a volume. Naturally, when on debatable ground, the author cannot find space for discussion of the relative merits of divergent views, and either omits these or steers a middle course.

In each system of the body he opens with a radiological survey and deals, in the case of the osseous system, with generalized bone disease, following with regional diseases. The section on bones is by far the most extensive, occupying more than a half of the volume. This is as it should be for a book of this kind. The author covers the ground very adequately and the illustrations are well chosen. He could with advantage have devoted more space to the other sections, but doubtless the publishers set a limit to the size of the book. Yet when we go over these sections we find that all the vital points are dealt with and that the illustrations are sufficient for the purpose.

The author does not pretend to originality in this volume, but aims at systematizing the main diagnostic points, and often includes little tables drawn up to contrast the differences of the appearances in diseases that are liable to be confused. Throughout he insists, both by precept and example, on the systematic and orderly examination of the radiographs. In fact this book reminds the reviewer of the days of his anatomy reading, when, bewildered by the mass of detail in the large standard textbooks, he turned to the "Pocket Gray," with which the book now under notice has close affinities.

We are not familiar with the process used for reproduction of the many well-selected radiographic illustrations that are printed in the text; they are not so good as the best half-tone blocks and are sometimes lacking in gradation. They all, however, show the points for which they are chosen, and considering the price of the volume it is an achievement on the part of the publishers to have been able to include so many. The book is well and attractively turned out, and is certain to find a ready sale, for not only will it be the "first string" for those taking up the study of radiology, but it will also be much used for reference by those who are not in close touch with the subject, particularly general practitioners, who, having little or no experience, are often faced with the interpretation of radiographs. We can heartily recommend this book.

MEDICAL INTERPRETATIONS FOR LAYMEN

Medicine and Mankind. Edited by Iago Galdston, M.D. (Pp. 217. 7s. 6d. net.) London and New York: D. Appleton-Century Co. Inc. 1936.

This book is an anthology of lectures to the laity delivered at the New York Academy of Medicine, edited by the secretary of that institution. Its object is "to enable the public to see clearly the workings of the medical and scientific mind." A chapter of special interest deals with the contribution of the primitive Americans to medicine. The author states that certain Mongolian characteristics have been observed in the indigenous natives of Brazil, pointing to a migration from Asia across the Behring Straits. In both North and South America medical knowledge had reached a surprisingly high level before the advent of the white man. The North American Indians were familiar with obstetric forceps, dilatation of the cervix, and methods of controlling post-partum haemorrhage. Even contraceptive measures were occasionally employed. Among the Mayas, pre-Incas, and Incas, amputations were performed and artificial limbs were in use. They filled teeth and fitted dentures. In difficult labours they performed symphisiotomy and carried out Caesarean section long before Caesar was born. Cocaine was employed as an anaesthetic; quinine, cascara, and red willow, the natural form of salicylic acid, are derived from the Indian pharmacopoeia.

The final chapter on the mystery of death is contributed by Dr. Alexis Carrel. Dr. Carrel maintains that death has been the builder of civilization, for through natural selection the strong and the intelligent persisted and the great races developed. Through the success of our battle against death the weak have become artificially the equals of the strong, and civilized countries are encumbered with those who should be dead. As a result natural selection has been almost suppressed.

MacCALLUM'S PATHOLOGY

A Textbook of Pathology. By W. G. MacCallum. Sixth edition, reset. (Pp. 1,277; 697 figures. 42s. net.) Philadelphia and London: W. B. Saunders Co. 1936.

Since its original appearance in 1916 this well-known textbook has been republished in a fresh edition at unvarying intervals of four years, a fact which itself indicates the sustained popularity of the work. It has always differed from other textbooks in the arrangement of the subject-matter on an aetiological instead of a regional basis. This has an admirable effect in dealing with such diseases as tuberculosis and syphilis, in which numerous organs may be involved by a process which is

of the same essential nature wherever it occurs, but in other directions the consequences are less fortunate. Diseases of which the cause is unknown must obviously present difficulties, and these are either allotted to isolated chapters, as in the case of Hodgkin's disease, or forced into a doubtful category; thus rheumatic fever appears among the infections caused by filterable viruses, as indeed does scarlet fever, a position with whose implications few will agree. A chapter on disturbances of mineral and pigment metabolism embraces such otherwise unrelated subjects as calcium metabolism, chlorosis, jaundice, and pneumonoconiosis. The last of these is scarcely a disturbance of metabolism, and would appear to have a more appropriate place in Chapter XIX ("Chemical Injuries"); it must be added that silicosis is dismissed in five lines, and asbestosis is not mentioned. The virtues of such arrangement are nevertheless largely a matter of opinion, and what is more important is that the whole work is comprehensive, up to date, and easily readable. The illustrations are profuse, and include many admirable photographs of well-chosen specimens. References to important original papers and other fuller works are given not at the end of each chapter, but after each section, sometimes of less than a page, an arrangement which should be found of great convenience.

Notes on Books

Le Artropatie Croniche, by Dr. GAETANO ZAPPALA, assisted by Professor Giuseppe Lazzaro, forms part of the *Policlinico* series of medico-chirurgical monographs, and as such will be of interest both to the physician and the surgeon. Professor Cesare Antonucci, a leading surgeon of Rome, who has written the preface, welcomes the appearance of this book, especially as monographs of this kind are rare in Italy, and the practitioner and students are consequently driven to consult works by French, German, English, and American authors. The book is divided into two unequal parts. The first, which is written by Dr. Zappala, is of a general character, dealing with anatomy and physiology, focal infection, allergy, cerebral symptoms, haematology, radiology, and classification. The second part, which forms the bulk of the work, deals with infective arthropathies (Lazzaro), non-infective arthropathies (Zappala), medical treatment (Lazzaro), and surgical treatment, including orthopaedic appliances (Zappala). An international bibliography of 221 references is appended. The book is published in Rome by Luigi Pozzi, price 25 lire.

We have received from Messrs. Knoll Limited (61, Welbeck Street, W.1) a volume which they are issuing in celebration of the jubilee of their foundation. It is entitled *Essential and Commonplace Aspects of Heart Disease*, and is written by Dr. KARL FAHRENKAMP of Stuttgart, who remarks: "My twenty years of collaboration with the Knoll works, twenty years of natural growth in the evolution of experimental pharmacology in its relation to internal medicine and to the special aims and tendencies of the Knoll laboratories, have made it a pleasure to accept the task of writing a small volume recording my personal experiences of heart disease, heart patients, and experimentally proved and pharmacologically established methods of treatment." The author provides a series of interesting comments on cardiac therapy, and the volume constitutes an acceptable jubilee gift.

The work entitled *Moscow in the Making*, by Sir E. D. SIMON, a former Lord Mayor of Manchester and Parliamentary Secretary to the Ministry of Health, Lady SIMON, formerly chairman of the Manchester Education Committee, Dr. W. A. ROBSON, reader in administrative law in the University of London, and Professor J. JEWKES, who occupies the chair of social economics in the University of Edinburgh, contains much that will be of interest to medical readers, especially those interested in public health and social medicine. In the first place the Moscow Soviet has instructed its representatives "to take great care of the health of toilers and their children, to increase medical assistance to the population, especially in villages, by building new hospitals and improving existing ones; to increase the supply of medicines, to insist on rendering more careful and attentive assistance to the patients, and to raise the qualification of medical staffs." The Moscow public health department, which employs no fewer than 40,000 men and women and controls all the hospitals and many of the clinics and sanatoria, contains two kinds of staff organization—namely, a shop councillor, elected by the whole mass of workers, and an association of doctors in each hospital, to advise on matters of professional conduct, ethics, and medical practice. Reference should also be made to the recent decree making abortion much more difficult, the active measures taken to solve the housing problem, and the arrangement of summer camps for children in the country. The book is published by Longmans, Green and Co., at 7s. 6d.

Dr. LESLIE J. HARRIS has now produced a second edition of *Vitamins in Theory and Practice* (Cambridge University Press, 8s. 6d.). In revising the text note has been taken of advances made during the year—for example, the chemical characterization of vitamin B_1; the isolation of vitamin E; and the recognition that vitamin B_2 is a complex consisting of at least three factors.

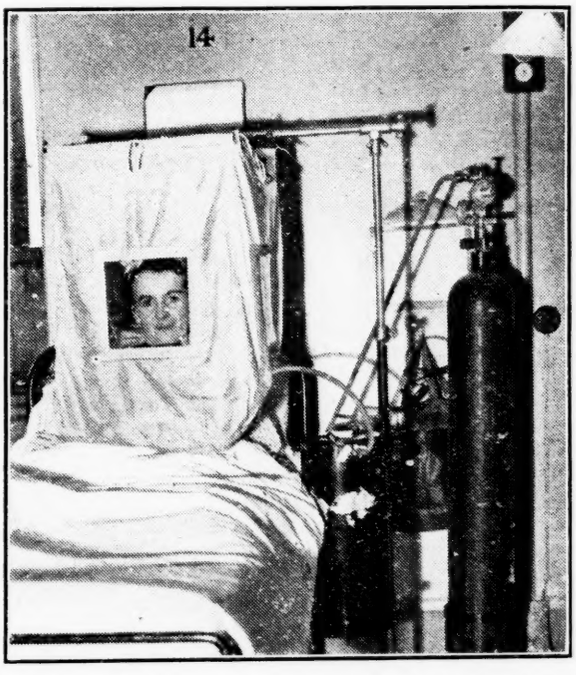
Preparations and Appliances

A NEW OPEN-TOP OXYGEN TENT

Dr. HUGH GAINSBOROUGH, Mr. J. ADDYMAN GARDNER, and Miss RUTH MURRAY (Biochemical Department, St. George's Hospital) write: The open-top oxygen tent was introduced by Burgess, Briggs, and Burgess (1934), who constructed it in the form of a rigid box with windows. At the lower end of the box was an opening through which the patient's head could be introduced, and a fabric collar was fitted round the patient's neck to make a "gas-tight" seal. The oxygen entered the apparatus through an ice-box suspended inside the tent, and this box was covered with a metal shield to prevent cold air displacing the oxygen. The principle involved was that the introduction of cold oxygen at a suitable speed produced a concentration of this gas round the patient's head sufficient for all ordinary therapeutic purposes. A British-made tent constructed of rubberized fabric was described in the *British Medical Journal* of September 12, 1936 (p. 542). Now certain important modifications have been introduced which have improved both its efficiency and its applicability. The final design is considered satisfactory, and by permission of the authorities concerned it is marketed under the name of the St. George's Hospital Oxygen Tent.

In the early pattern the presence of the ice-box in the tent itself was a disadvantage. The cooling system now consists of an external box made of rustproof metal which is attached to the stand of the apparatus. Inside this there is a coil of metal tubing of adequate length and bore through which the oxygen passes. The box is filled with crushed ice and then with water to ensure adequate contact with the coil, and under such conditions oxygen passing through at a rate of 7 litres a minute is cooled about 8° C. In unfavourable conditions during summer the cooler can be packed with alternate layers of crushed ice and common salt before filling with water, and the temperature of the oxygen can be lowered to about 3° C. The oxygen is not humidified, as we found that the humidity in the tent at the level of the patient's mouth varied between 80 and 95 per cent. Hygrometer readings in the tent are possibly not of much value, as there is a diminishing gradient of humidity from the bottom to the top of the tent. The elastic collar round the

neck orifice of the original tent caused a good deal of discomfort and heating. The material is now cut amply round this orifice so that it can be folded loosely over the front of the patient's chest or tucked into the upper garment. The former method is quite adequate as a rule, and allows the patient to use a handkerchief or a spittoon with surprisingly little disturbance of oxygen concentration. In use, as soon as the tent has been placed in position over the patient's head oxygen is run in at the rate of 10 litres a minute for about ten minutes, and the rate is then reduced to 7 litres a minute.



With this supply the oxygen concentration at the level of the patient's nose varies between 45 and 65 per cent. Under suitable conditions, with absence of draughts, a supply of oxygen at the rate of 5 litres a minute may be adequate to maintain the oxygen concentration at breathing level well over 50 per cent. The new tent has a very wide range of utility, and we think it shows several advantages over other forms of apparatus for oxygen administration. There are no nursing difficulties; the hood can be sterilized easily; the apparatus is portable and easy to operate; and finally, with ordinary precautions there can be no risk of explosion.

REFERENCE

Burgess, A. M., Briggs, A. S., and Burgess, A. M., jun. (1934). *New England J. Med.*, **210**, 254.

SIMPLE GAS-ANALYSIS APPARATUS FOR USE WITH OXYGEN TENTS

DR. HUGH GAINSBOROUGH and MR. J. ADDYMAN GARDNER (Biochemical Department, St. George's Hospital) write: This apparatus was designed to provide a simple rapid method of estimating the carbon dioxide and oxygen contents in oxygen tents. It consists of a glass bulb of cylindrical shape with a lower narrow portion (Fig. 1). The ends are capillary tubing closed by simple one-way taps. The volume between the taps is 10 c.cm. and the volume of the narrow section is about 1 c.cm. The whole of the bulb is graduated into 100 equal divisions by volume. It is used as follows. The apparatus is first cleaned and the taps carefuliy greased. The top end (Fig. 1) is connected by fine rubber tubing to the tent or to a capillary glass tube the distal end of which can be placed at any desired point in the tent, and the other end to a small reservoir of water (A). The taps are both turned to the through position, the clip on the reservoir tubing is opened, and by lifting the reservoir up and down three times the apparatus is filled with a true local sample of the tent atmosphere. On lowering the reservoir for the last time the water in the bulb is allowed to descend till it just reaches the top of the lower tap, which is then closed. The top tap is closed next and the apparatus disconnected at both ends. It is important that the bulb itself should not be grasped in the hand since the gas should be at the temperature of the water in the reservoir. The next stage is to force the absorbing solution into the analyser by means of the Woulfe bottles and rubber bulbs. The plain stopper is taken out of the bottle, which contains 40 per cent. potash, and the apparatus inserted into that same neck till the rubber stopper on its lower end is firmly fixed. The lower tap is then opened and by compressing the rubber bulb about 1 to 2 c.cm. of solution is forced into the analyser and the lower tap quickly turned. The apparatus is removed from the Woulfe bottle, the lower end rinsed with water, and it is then placed horizontally and rotated gently for one minute. It is next immersed upright in the cylinder of water, B, and allowed to stand to reach the temperature of the water; it is then lifted till the lower tap can be opened and the tube is adjusted until the fluid level inside is the same as outside, when the lower tap can be again closed and a reading taken which gives directly the percentage of carbon dioxide. The apparatus is then connected, as before, to the Woulfe bottle, which contains alkaline pyrogallol solution, and about 2 c.cm. of this is forced into it by the use of the compressor bulb. The tap is again closed, the apparatus removed, the lower end rinsed carefully without dropping any of the very corrosive alkali pyrogallol solution, and then rotated as before for three to four minutes in a horizontal position. It is then reinserted in the glass cylinder and the degree of absorption measured indicates the oxygen content. Care should be taken to close the Woulfe bottles immediately after use. The apparatus must be carefully cleaned. This is easily done if a small piece of rubber tube is put on the top capillary and the apparatus held under a thin stream of running water from the tap. After washing with tap-water this can be blown out, the apparatus filled with 5 per cent. sulphuric acid, emptied, and finally washed out with distilled water. The alkaline pyrogallol solution is prepared by dissolving

FIG. 1.

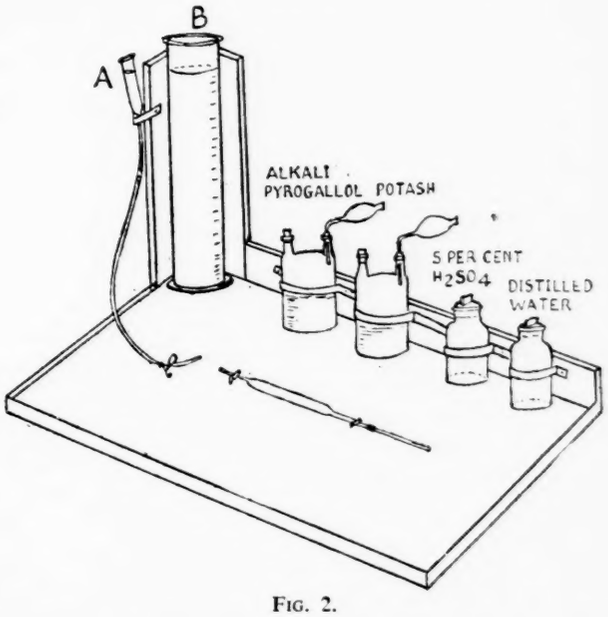


FIG. 2.

10 grammes of pyrogallic acid in 100 c.cm. of 80 per cent. potash. This solution must be stored in a very carefully stoppered bottle and exposed to the air as little as possible. For the sake of convenience and in order to avoid any mess or damage to table or shelf tops by the alkali solutions used the analyser is supplied by the makers complete with all necessary accessory apparatus mounted on a suitable tray.

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TUBERCULIN-TESTED MILK

No one who has taken the trouble to ascertain the facts is under any delusion about the unsatisfactory quality of the nation's milk supply. It has been aptly compared by Sir John Orr to that of our water supplies of a hundred years ago. How is this position to be remedied? In a well-informed and closely reasoned report[1] issued from the Agricultural Economics Research Institute of Oxford Mr. R. N. Dixey attempts to answer this question. The choice for him lies between the production of milk from tuberculin-tested herds and compulsory pasteurization. Against the latter course he brings a number of arguments, the most important of which is that, in order to afford a completely effective safeguard against milk-borne disease, pasteurization has to be carried out with a standard of exactitude more resembling that met with in a laboratory than in a commercial plant. His leaning is strongly towards the alternative course of producing tuberculin-tested milk. The difficulties, however, in the way of this choice are very considerable, and the body of his report deals with an examination of the practical measures involved. First of all, it is pointed out that not all milk need come from tuberculin-tested herds. Milk for cooking and for most manufacturing purposes could quite well be used in the infected condition. The supply of milk and cream for consumption in the liquid state, including that for butter and soft cheese production, could probably be assured if about two-thirds of the gallonage was derived from herds free from tuberculosis. Secondly, an attempt is made to ascertain the cost of establishing a tuberculin-tested herd. Inquiries conducted on 180 farms producing tuberculin-tested milk showed that the average cost was about £13 per cow. Of this £7 were for structural alterations, £2 to £3 for milking equipment, and £3 to £4 for the replacement of reacting by non-reacting cows. Not all of this expenditure could strictly be assigned to the elimination and avoidance of tuberculous infection; some of it was rendered necessary for the production of clean milk. Broadly speaking, however, an additional cost of £13 per cow may be accepted as a provisional estimate, subject, of course, on different farms, to wide variations, for the production of tuberculin-tested milk. If two-thirds of the milk supply was to be of this type an immediate expenditure of 13½ million pounds would be required. This is regarded as by no means an excessive figure, "and if the benefits to public health would justify the Government in advancing all, or part, of this cost, the present period of cheap money clearly offers as good an opportunity as has occurred for many years." His final conclusion is that the greatest hope for increasing consumption lies in providing the public with "safe, clean milk as it comes fresh from healthy cows."

Mr. Dixey's thesis is put forward in far too serious a manner to be lightly criticized. It is impossible, however, to avoid pointing out a fallacy in his major premise—namely, that milk from tuberculin-tested cows is safe. So it is: safe from the risk of causing tuberculosis, but not from the risk of carrying a number of other different infections. The experience of the United States, of Denmark, and of this country during the past few years has provided evidence, cumulative and convincing, that milk produced under the most careful sanitary conditions may yet be responsible for spreading scarlet fever, septic sore throat, diphtheria, typhoid fever, paratyphoid fever, dysentery, food poisoning, and undulant fever, often in a serious and extensive epidemic form. Tuberculosis is not the only disease borne by milk, and even if all the milk in the country was derived from tuberculin-tested herds it would still be desirable for the protection of the public to submit it to efficient pasteurization or other form of heat treatment. By all means let us have milk from tuberculin-tested, abortus-tested, and mastitis-free cows, but let us, in addition, protect ourselves by pasteurization against the danger of its contamination from human and other sources.

There is a fundamental divergence of outlook between public health workers on the one hand and agricultural and veterinary workers on the other, due to a confusion of the main issue. Hitherto the production of clean milk and the control of disease in the herds has rested very largely with the Ministry of Health and local health authorities, and both have been made contingent on the demand by the public for high-grade milk. This demand has not, in fact, been forthcoming, except to a quite trivial degree, and in consequence comparatively little progress has been made in the eradication of disease among the cattle population. If progress is to be made it is important, as the Reorganization Commission[2] points out, to eradicate disease for

[1] Dixey, R. N.: *Tuberculin-Tested Milk: A Study of Reorganization for its Production.* Agricultural Economics Research Institute, Oxford, 1937.

[2] *British Medical Journal*, January 2, 1937, p. 23.

its own sake, and not to make it dependent on the payment of a higher price by the public for milk derived from disease-free herds. The production of clean milk and the eradication of disease are problems for the agriculturist and the veterinarian, and we are wholly in agreement with Mr. Dixey that the Government ought to advance the money to clean up herds and improve the quality of the milk supply. On the other hand, the distribution of milk is essentially a problem for the public health authorities, and if they refuse to take the responsibility of distributing raw milk to the population, and insist on rendering it safe by pasteurization, then it is really no concern of our agricultural and veterinary colleagues. No antagonism exists, or ought to exist, between pasteurization on the one hand and the production of clean milk and the eradication of disease from the herds on the other. This is borne out by experience in the United States, where a high proportion of milk from tuberculin-tested herds is pasteurized in the large cities. The two problems are distinct. Sooner or later we shall be forced to take the control of milk production out of the hands of the public health authorities and transfer it completely to our agricultural and veterinary colleagues, to whom it rightly belongs. If they are wise they will press for adequate subsidies to convert our disease-riddled cattle population into one that is more worthy of a country which prides itself on its care of the lower animals. The public health authorities will then be left with the control of the consumption end, and they will be able to devote a great deal of their energy to tightening up the supervision of pasteurizing plants and ensuring, so far as possible, that all milk delivered to the public, at any rate in urban districts, shall be as safe as our large filtered and chlorinated municipal water supplies.

"A HOUSE WORTH LIVING IN"

Some years ago Dr. K. Henderson made an interesting quotation from the report of Gartnaval Asylum for the year 1816. The case is there recorded of an old dragoon who, every three months, had a dreadful attack of outrageous insanity. Gradually, however, he improved, and it is recorded that he became "very happy knitting worsted gloves until a proper place of residence was found for him." In the same report it is stated: "Two looms have been erected by the superintendent, which made one patient, who had been for some years listless almost to torpor, exclaim that the house was now altered indeed; it was now worth living in." Anything we can here say about occupational therapy can really be no more than an elaboration of this impressive human paragraph written by an enlightened psychiatrist over a century ago. The seeds sown by the enterprising doctor of the past would indeed rejoice him if he could but see the fruits of his labours. Nowadays no mental hospital could be regarded as efficiently organized if occupational treatment did not form part of the daily routine. How far this treatment has developed is exemplified in a book on recreational therapy for the mentally ill, written in the United States by Mr. John Eisele Davis and Dr. William Rush Dunton.[1] In a foreword Dr. Adolph Meyer observes that the best form of treatment is the removal of the cause. The best help in readjustment is the use of those parts of the patient's make-up which work well, so as to give the most normal setting for what needs readjustment. This naturally demands resourcefulness and actual experience of an unusual type—the what to do and the how—and a collaboration between the organizer of activity and the physician and the patient.

Recreational therapy has a deeper, more significant and extensive contribution than this, which can only be attained through the natural and pleasurable social unfolding of the psychotic patient. Desirable social readjustment, higher levels of social striving, and worth-while social accomplishment may well supply some of the objectives. Recreational therapy should operate as an adjuvant to which many social sciences may bring distinctive contributions. The aim should be to recreate the spirit through many stimulating and tonic effects of interest inherent in the multifarious activities which this therapy provides, to increase the strength of positive volitional responses to social reorientation, and to assist in healthful emotional expression and emotional release which will provide the balance and effective stimulation for constructive effort. Such a programme of recreational activities for patients with mental disorder must be comprehensive and highly diversified, and may well take in such seemingly unrelated pursuits as playing Mendelssohn's "Spring Song" or participation in an informal circus.

It is evident that the spirit of occupational treatment permeates the psychiatric clinics in America. Many patients may not be well enough to leave the sanatorium, but it is evident that everything is done to make them happy and busy with all kinds of occupation. They can at least say truthfully that "the house is well worth living in."

[1] *Principles and Practice of Recreational Therapy for the Mentally Ill.* By John Eisele Davis, M.A., in collaboration with Dr. W. Rush Dunton, jun. London: W. Heinemann. (15s.)

MORE ABOUT VIRUS DISEASES

How profoundly filterable viruses differ from bacteria is only understood by those who take a more than ordinary interest in microbiology. It is not even certain that some of them are living entities. They are demonstrably particulate, but some are so small that the simplest organization necessary for biological activities is almost inconceivable in such a compass. To call the virus of the Rous sarcoma a "transmissible mutagen" did not carry matters much farther, but it was an ingenious expression, implying a belief that here was something of a nature fundamentally new. That the immunology of virus diseases also differs from that of bacterial infections, and that the multiplication of viruses appears only to occur within living cells, are other fundamental points of distinction. In this sphere so much is known, yet so much is still unknown, that to take stock occasionally and to speculate within reasonable limits is helpful. Two recent papers on these lines are well worthy of study. Goodpasture[1] reviews the phenomena of immunity in virus diseases, laying particular stress on an aspect which has only been fully appreciated within recent years—namely, the purely intracellular habitat and activities of viruses, and their entire insusceptibility once established there to the influence of humoral antibodies. Antiviral serum is a magnificent prophylactic but worthless therapeutically for this reason. Goodpasture regards it as an axiom that killed virus cannot immunize, and suggests as an explanation for this that an immunizing antigen is produced only during actual infection. On a much larger scale than this paper is Findlay's[2] review on variation in animal viruses; its scope may be gathered from the fact that it ends with a bibliography extending to fifteen pages. The argument here is that variants develop in viruses as they do among bacteria, and for the same reasons, such as habituation to another species, with similar changes in antigenic constitution and in pathogenicity; thus viruses behave as other living entities. This is a weighty argument, capable of and receiving profuse illustration. It is perhaps more impressive when it deals with the phenomena of actual disease; serological methods seem sometimes to be carrying a greater weight in connexion with virus diseases than true comprehension of their mechanism and meaning can bear. A short account has also just been published of some observations which bear on one interesting aspect of immunity to virus diseases. It is well known that most adults and older children have neutralizing antibody for poliomyelitis virus in their blood and are consequently immune to this disease. It is by no means certain whether this immunity is acquired by a symptomless infection or produced in some other way. If the latter, other virus infections might conceivably protect against poliomyelitis, and evidence was forthcoming some years ago that vaccinia has this effect, the incidence of poliomyelitis in vaccinated children being found considerably less than in unvaccinated. Dalldorf, Douglass, and Robinson[3] now report that in monkeys suffering or recently recovered from experimental distemper inoculation with a poliomyelitis virus which is invariably fatal in control animals causes a mortality of only 33 per cent. The meaning of this result is not discussed, but one possibility at least appears to be that there is some antigenic relation between the two viruses. In view of the difficulties and dangers of attempted active immunization against poliomyelitis, the possibility, perhaps foreshadowed in this observation, of securing protection by non-specific means would be very welcome.

[1] *Amer. J. pub. Hlth.*, 1936, **26**, 1163.
[2] *J. roy. microscop. Soc.*, 1936, **56**, 213.
[3] *Science*, 1937, **85**, 184.

HYPOCHONDRIASIS

Hypochondriasis, or the "bodily complaint," has troubled physicians ever since medicine began. The hypochondria, the regions below the costal cartilages, were considered to be the seat of the black bile which caused melancholy, and Robert Burton in his *Anatomy of Melancholy* shows a psychological insight into the condition which was much in advance of his time. Among its causes he numbers frustrated ambitions, disappointed love, and solitariness, and in addition to physical treatment he recommends confession, spiritual discipline, distraction, music, mirth, and merry company. Mandeville describes a common approach of the hypochondriac to his physician: "I have sent for you, doctor, to consult you about a distemper of which I am well assured I shall never be cured." Dr. Felix Brown[1] has studied the records of 226 patients admitted to the Phipps Clinic in 1934, and examined in more detail forty-one cases of hypochondriasis. The incidence he found to be 45 per cent. of the total admissions, more or less equally divided between the sexes. The bodily symptoms showed the widest variety. His attitude towards the disease is one which in earlier days was stressed more by lay than by medical writers, as he shows in a rich historical survey. He calls it a reaction of the individual to a life difficulty rather than a disease, and classifies his forty-one cases roughly into five categories of bodily complaints. First come those which are partly on a physiological level and usually associated with anxieties; those which have appeared by substitution or conversion of an affect, usually anxiety, with more or less elimination of the affect; and those which have some more or less conscious purpose. These three types, he says, merge into one another and may be variously mixed in the merergasic, or psychoneurotic, reactions. His fourth and fifth types are bodily complaints symbolic of an essential conflict of the personality, and bodily complaints consistent with a mood disturbance, usually depression. The method of treatment he recommends is that of distributive analysis; the physician actively distributes the analysis along the lines which seem most pertinent, and makes some synthesis or constructive formulation at the end of every interview. No special search is made for a single factor, such as a sexual trauma in early childhood; definite advice is seldom given, but the alternatives are put before the patient and explained, and he is allowed to make his choice. He is encouraged thoroughly to help himself. In every case a complete history is taken and

[1] *J. ment. Sci.*, 1936, **82**, 295.

a psychiatric examination made; in suitable cases a Binet-Simon test is performed. Free association and hypnosis are sometimes used. If the patient is admitted to hospital he enters a regular routine of occupational therapy and physical exercise and has to adjust himself to his own group of about thirteen other patients, any topical difficulties being freely discussed and analysed. An immense change, says Dr. Felix Brown, can often be brought about by re-education and discipline, and by putting the patient where the hypochondriacal reaction will not work. Rest in bed forms no part of the treatment of the patient with a psychogenic body complaint. In the words of Sir William Gull, if the patient thinks that the doctor is taking pains to get at the secret of his troubles he will be inclined to accept the first word of encouragement the latter throws out, and the reflecting influence of reviving hope will be certain to assist recovery.

ACTION OF ASPHYXIATING WAR GASES

Those war "gases" commonly referred to as asphyxiating, such as chlorine, phosgene, di-phosgene, and chlorpicrin, must be distinguished from the true asphyxiants such as nitrogen, methane, etc., which act simply by displacing oxygen, and from those, such as carbon monoxide and hydrocyanic acid, which disturb the transport and utilization of oxygen in the organism. The war "gases" (gases or liquids) referred to are better named lung irritants. The mechanism of action of the best known of these depends on the chlorine content: thus phosgene ($COCl_2$) is held to be hydrolysed by the water in the lung tissue with liberation of free HCl and CO_2, the irritant action resulting from the local effects of the acid. This simple view has been challenged, notably by A. Kling.[1] From a consideration of certain properties of the lung irritants—for example, their strong affinity for the hydroxyl group and their ease of hydrolysis—he is impressed by the disproportion between the small amount of irritant which is effective and the overwhelmingly greater size and weight of the affected organ. He also lays stress on the solubility of these irritants in lipoids, and is led to the view that there is some underlying element in the lung parenchyma which makes possible the action of all these lung irritants. He therefore puts forward the suggestion that cholesterol (unsaturated complex alcohol) may be the common body which by combining with the irritant gas undergoes such modification of its physico-chemical properties as to produce the characteristic functional changes in the lung parenchyma. To test this hypothesis Kling and his fellow workers first attempted to prepare compounds of phosgene (and some of its derivatives) and cholesterol. Such compounds could be prepared and their synthesis formulated, and it is interesting to note that the derivative of phosgene which is hardly irritant at all—namely, methyl monochlorformate—does not give a cholesterol ester. When, however, this derivative of phosgene was further chlorinated and thus made very irritant, it gave cholesterol esters readily. It appears, therefore, that there is some parallelism between the power to produce injury to the lung and that to form cholesterol esters. The hydrolysis of these esters was studied in detail. The products of hydrolysis depend, of course, upon the particular gas used for the ester formation, and include carbonic acid (in all cases), hydrochloric acid, formaldehyde, carbon monoxide, and the original alcohol (in all cases). The particular ester studied could be distinguished by the ratio in the hydrolysate of CO_2 to inorganic chlorine: thus when phosgene is used this ratio is 1; with monochlormethyl-chlorformate it is also 1; but when the higher chlorinated trichlormethyl-chlorformate the ratio is 1/2, and so on. The next step was to extract the lipoids from the lungs of various animals and to demonstrate that similar esters to the above could be prepared with the irritant gases. The formation of esters could likewise be shown when using pulped lungs from various animals. A good case was therefore made for the formation of lipoid esters in lung lipoids under the influence of, at any rate, the phosgene series of gases. More difficulty was experienced in demonstrating this in the lungs of anaesthetized dogs which had been submitted to the action of these gases. But if massive doses were administered to large animals it was possible to demonstrate that the free cholesterol in the lungs was diminished by 20 per cent.:—that is, 20 per cent. was esterified. Further evidence will be necessary before this hypothesis can be accepted, but the case has been presented in a plausible manner if not yet in an entirely convincing one. If it can be proved that demonstrable physico-chemical changes in the lipoids are causally related to acute oedema of the lungs a contribution will have been made to the pathology of this condition.

[1] *Bull. Acad. Méd.*, Paris, 1936, **116**, 465.

THE PUBLIC HEALTH ACT, 1936

When new Acts of Parliament reach the Statute Book it is customary for publishers to issue them in book form with explanations, annotations, and cross references. As a rule such books have been of limited value, probably because the laborious research into the history of the law and its judicial interpretation, necessary to make them really useful, would have occupied more time than the compiler was allowed for his task. The Act of 1936 is in a different category. When it was first issued in draft form it was accompanied by an explanatory report, the Second Interim Report of the Local Government and Public Health Consolidation Committee, which is in itself an essay on public health law and includes detailed descriptions of most of the changes which the Act now embodies. The work of interpreters is thus facilitated, and Mr. David Beattie's recent book[1] is an example of the benefits of the procedure for consolidation followed in recent times. It opens with a general introduction describing the process by which the Bill reached Parliament and was handled by it, and referring to the nature of the major amendments contained in the Act. Each of the twelve parts of the Act is introduced by a brief explanatory note, special reference being made to any outstanding change in the law contained in that part. The sections them-

[1] *The Public Health Act, 1936.* By David J. Beattie, L.L.M. London: The Solicitors' Law Stationery Society. (40s.)

selves are amply annotated. The usual tables of cases and of statutes are included, and useful tables are also introduced relating the sections of the Act to those of previous general Acts. The book is fully indexed and excellently printed and produced. A careful examination has failed to reveal any errors or important omissions. This publication should therefore be useful even to those who possess the Report of the Consolidation Committee and the subsequent circulars of the Ministry dealing with the Act.

DR. ROUTLEY'S VISIT

Dr. T. C. Routley, General Secretary of the Canadian Medical Association, is now on a visit to this country to make a first-hand study of the problem of National Health Insurance and the inside working of the Act. His itinerary in Great Britain has been planned at the headquarters of the British Medical Association. On April 8 Dr. and Mrs. Routley were entertained at luncheon at Grosvenor House by the chief officers and officials. Among those present to meet the guests were the President, Sir Farquhar Buzzard, the Treasurer and Mrs. Bishop Harman, Sir Humphry Rolleston, Sir Henry Brackenbury, Dr. Robert Hutchison, and Dr. C. O. Hawthorne. As the Chairman of Council, Sir Kaye Le Fleming, remarked in his short speech of welcome, the occasion was an informal one. He would like, he said, to take this opportunity of acknowledging the generous hospitality which members of the British Medical Association had received on the other side of the Atlantic. He recalled with pleasure his meeting with Dr. Routley in 1932, when the Association commemorated its centenary year by a pilgrimage to Worcester. Dr. Routley had come over here to study the important problem of National Health Insurance. Although he, Sir Kaye, did not know fully the attitude of Canada to this problem, it was quite clear to him that the U.S.A. had a lack of understanding of the matter. He therefore wished Dr. Routley every success in his mission, and would point out that, although the methods of conducting National Health Insurance in this country could not necessarily be applied in detail in Canada, the principles laid down for its conduct were essential for success. It had, he concluded, been a source of regret to him that the links between the British Medical Association and the Canadian Medical Association were not of a more practical nature, considering how strong were the sentimental ties that bound these two organizations.

In an apt and gracious speech Dr. Routley expressed his appreciation of the reception given to him and to Mrs. Routley, and of the facilities offered him for carrying out the investigation he was making on behalf of the Canadian Medical Association. "We come to you," he said, "at a time in the history of our country when levelling influences are needed." Although Canada physically was a great country, the Canadian Medical Association was small. Illustrating this remark with a pleasant story about the Canadian Pacific Railway, Dr. Routley remarked that he came here with an application to "travel over your line." It had been a privilege to him to attend the meeting of the Council of the British Medical Association on April 7, and he was much impressed by the care and the work that lay behind the presentation of the reports of the various committees and by the statesman-like way in which the business of the Council was handled. National Health Insurance was a live issue in Canada, but the various proposals on foot had not yet been implemented by legislative enactment. In view of the importance of this question it was strange that Canada had waited twenty-five years before sending an official medical emissary to Great Britain, and more than strange that the U.S.A. had sent no emissary at all. There were, he said, strong reasons why the Canadian Medical Association and the British Medical Association should get together in closer and more practical co-operation. Although he could offer no detailed plan to make this effective, he suggested that a committee might be set up on each side for the purpose of interchanging ideas and discussing common problems. At the coming meeting of the Canadian Medical Association at Ottawa a great welcome awaited the representatives of the British Medical Association, and their visit was looked forward to with keen interest and pleasure. Finally, Dr. Routley conveyed to the British Medical Association the good wishes of medical men in Canada, and said that not least among their possessions was pride at belonging to the British Commonwealth of Nations.

"HISTORADIOGRAPHY"

X rays lack one property that is possessed by visible light, that of being refracted by an optical system. It is true that they can be refracted by crystal planes, a property made use of in *x*-ray spectroscopy, but this does not make it possible to focus them optically in a camera or a microscope. In the study of histological sections by radiography, therefore, the magnification of the picture must take place by enlargement of the finished film and not during the exposure, as in the photomicrograph. P. Lamarque[1] has elaborated an ingenious method which he has termed "historadiography," by which he obtains radio-photomicrographs of histological sections. He uses a special *x*-ray tube energized with a voltage of only 5 kilovolts. The resulting *x*-ray beam is absorbed by air; to avoid this effect the histological section is gummed to a sensitive photographic film and placed in a vacuum chamber attached to the tube. The *x*-ray exposure made, the sensitive photographic film is then developed and viewed under the microscope in the ordinary way. Photomicrographs may of course be taken of the section for purposes of reproduction. An essential feature of the method is the sensitive film, which at present Lamarque makes himself. The ordinary *x*-ray or photographic film is too coarsely grained to allow much in the way of magnification. Enough work has already been done to prove that it is no mere duplicate of the standard colour method, but that it may reveal histological features not shown by ordinary staining methods and that it is really complementary to them. When the technique is perfected a considerable new field of research will be opened up, and one that may yield important results.

[1] *Radiology*, 1936, **27**, 563.

ENDOCRINES IN THEORY AND PRACTICE

This article is one of a series on Endocrinology contributed by invitation

THE MENOPAUSE

BY

P. M. F. BISHOP, B.M., B.Ch.

The menopause is a period of variable duration through which women pass naturally some time between the ages of 45 and 55. For about 15 per cent. of women it is symptomless: in the remainder the severity of the symptoms varies; they may be so mild as to render treatment unnecessary or so severe as to lead to profound mental disturbances. Surgical removal of the ovaries in younger women or destruction of ovarian function by deep *x* rays or radium brings about an artificial menopause which is usually attended by similar but relatively more severe symptoms.

The great variety of changes which may take place can be grouped conveniently under the following headings:

Vasomotor Changes

The tendency to vasomotor instability is shown by the most characteristic menopausal manifestation—hot flushes. In these attacks dilatation of the vessels of the skin is accompanied by sweating and discomfort due to a sensation of heat and suffocation, which after a few minutes gives way to cold shivers. The hot flush is painfully obvious to those around the patient and consequently causes her some embarrassment. Flushes may appear without warning at any time of day or night, frequently awakening the patient, but they are especially prone to follow circumstances giving rise to emotional stress or excitement. Their frequency varies greatly in different patients, and they may occur only once or twice a week or twenty or thirty times a day.

Cardiovascular Symptoms

Though no organic cardiac lesion is associated with the menopause, symptoms such as palpitations and precordial pain may be experienced. The blood pressure is sometimes found to be raised, and it has been suggested, on inadequate experimental grounds, that this may be due to the excessive activity of the anterior pituitary basophil cells or of the adrenal cortex. Ovarian deficiency, both in earlier life and at the time of the menopause, is often associated with acrocyanosis, and in some cases ovarian replacement therapy has led to improvement in the circulation to the extremities.

Arthritis

Pains in the joints, backache, and fibrositis are all common complaints, and a menopausal type of arthritis is described which is due to chronic hypertrophic synovitis and usually affects the knees.

Emotional Instability

Practically every menopausal woman becomes aware of a certain mental clumsiness, an inability to cope with the ordinary problems of daily life, and a tendency to "give in." The realization of her shortcomings is worrying, and she readily becomes depressed. Emotional instability is well defined, and the patient reacts to trivial situations with rather surprising attacks of laughter or tears. She is subject to rapid and frequent changes of mood: at one moment she will be unbearably irritable, at the next pathetically contrite. There may be marked changes in personality and severe attacks of mental depression, sometimes lasting for days, during which the patient may become suicidal. A condition of hypochondriasis, which is particularly distressing to those around her, may develop out of the complicated syndrome, even in the milder cases, and persist for the remainder of the patient's life.

Headaches and giddiness are common and appear early. Migraine is frequently aggravated or induced, but is sometimes amenable to treatment with ovarian extracts.

Endocrine Changes

Owing to the delicate interdependence of the components of the endocrine system the functional failure of one gland is likely to affect all the others. A common example is the gradual masculinization which may take place. The breasts atrophy, hair appears on the chin and upper lip, and the features assume a male appearance. This virilism is probably due to a compensatory overactivity of the adrenal cortex. Thyroid function frequently diminishes and signs of hypothyroidism are common. Skeletal changes suggestive of acromegaly may occur and provide evidence of the disturbance of pituitary secretion. There are some who believe that the obesity which commonly develops is endocrine in origin and remark on the "girdle" type of distribution, which suggests that the pituitary may be responsible.

The essential feature of the syndrome is of course amenorrhoea, which may appear quite suddenly or after some months of menstrual irregularity. Other characteristics of the gradual ovarian failure are the atrophy of the breasts, uterus, and external genitalia. Sexual desire usually wanes, particularly when the menopause has been surgically induced, but may remain unchanged.

Methods of Treatment

General.—Assistance can be rendered by the members of the patient's household. Her husband and her relatives should be told that she is passing through a difficult phase of life and that they should therefore be tolerant and sympathetic in their dealings with her. She should be shielded as much as possible from domestic worries, and sometimes a holiday away from her household duties is beneficial, though it may be harmful if she is a woman of forceful personality who will worry over the conduct of her home in her absence. She should be encouraged to pursue any hobby which will prevent her from becoming introspective about her condition. She may suffer from a secret fear that her symptoms are due to cancer, and it is wise for her doctor to reassure her specifically on this point. Bromides and valerian are popular and sometimes efficacious. Thyroid extract is of value only in those cases in which there is clinical evidence of hypothyroidism.

Pituitary Extracts.—There is an increasing tendency to prescribe anterior pituitary preparations. This form of therapy is based on a misunderstanding of the endocrinology of the condition. The relative activity of the ovary and pituitary is complementary, so that when ovarian

function is declining the gonadotropic activity of the anterior pituitary is excessive. That there is no deficiency of pituitary secretion at the time of the menopause is shown by the increased concentration of the follicle-stimulating factor in the urine. Furthermore, it has been pointed out that the severity of the symptoms—for example, the number of hot flushes a day—runs parallel with the curve of urinary excretion of the follicle-stimulating factor. Nor does there appear to be a reasonable basis for attempting to control the uterine haemorrhages which sometimes occur during the early stages of the menopause with gonadotropic preparations. These are designed theoretically to stimulate ovarian function, whereas the failure of ovarian function at the menopause is progressive and inevitable, so that any attempt at artificial stimulation merely exemplifies the unsound principle of "flogging the tired horse." It is, moreover, fashionable to administer anterior pituitary preparations by mouth. For this there is no experimental justification. All animal experiments so far conducted on these substances have failed to show any effect if the material is adminstered in any other way than by injection. A few encouraging results of irradiation of the pituitary with the object of diminishing its gonadotropic activity have been reported, but in the majority of cases this seems an unnecessarily drastic procedure.

Ovarian Extracts.—By far the most satisfactory method of controlling the symptoms of the menopause is by the administration of oestrogenic preparations. This method of treatment produces results probably by temporarily restoring the endocrine balance until the patient has accustomed herself to the new level of endocrine activity. The ovarian extract acts both by replacing the ovarian deficiency to some extent and by damping down the excessive activity of the pituitary.

Principles of Treatment with Oestrin

Urinary Estimations.—It has already been pointed out that, owing to the compensatory overactivity of the pituitary, an excess of the follicle-stimulating factor can be demonstrated in the urine. Quantitative estimations of this principle are, however, laborious, expensive, and subject to a considerable margin of technical error. It is hoped that in the near future such estimations will be placed on a more practical basis, but at the present they are merely of rather doubtful academic interest.

Vaginal Smears.—The use of the vaginal smear technique of Papanicolaou and Shorr has proved to be of greater value. As the result of deprivation of oestrin the vaginal mucosa undergoes atrophy, and the appearance of the menopausal vaginal smear is quite characteristic. By the examination of such a smear, therefore, it is possible to identify those cases in which the symptoms are associated with ovarian deficiency. In the first group oestrin therapy usually produces satisfactory results; in the second group it is without effect. Furthermore, it is fortunate that the human vagina is a delicate indicator of oestrogenic influence, for one is enabled to estimate the correct dose of ovarian extract for each individual patient by determining the amount necessary to induce an oestrous type of smear. This applies only to the more common and milder symptoms, which are gradually coming under control by the time an oestrous smear has been produced. This is of importance, for the object of the treatment is not completely to replace the ovarian activity of preclimacteric life, nor entirely to counteract the excessive activity of the pituitary, but to accustom the patient gradually to the new level of endocrine balance.

The Psychological Factor.—A preliminary course should be given exactly resembling the intended regime of oestrin therapy with regard to mode of administration—whether by mouth or by injection, colour of the tablets, appearance of the solution for injection, etc.—but differing from it in that the material administered is inert. For this purpose "dummy" tablets of oestrin or a solution of sterile olive oil may be employed. This procedure serves to differentiate the more fanciful complaints, which tend to disappear, from the genuine symptoms of ovarian deficiency or gonadotropic excess which persist at the conclusion of such a course.

Hot Flushes as an Indicator.—The hot flush is the most clearly defined of the subjective symptoms, and is therefore a valuable indicator of progress. The patient should be instructed to keep a note of the daily number of hot flushes both during the preliminary period of "control" treatment and later when active oestrogenic compounds are being administered. One should aim not at complete elimination of the hot flushes but at reducing them to one or two every day or every other day, since, as has already been pointed out, the object of the treatment is not to postpone the menopause artificially by giving large doses of oestrin, but to alleviate the symptoms sufficiently to allow the patient to accustom herself as comfortably as possible to the new level of endocrine balance.

Dosage of Oestrin

With this object in view it is obviously desirable to start with relatively small doses; the administration of large doses from the beginning in order to enhance one's reputation with the patient by procuring miraculous and immediate results is to be deprecated. In the milder cases it is well to begin by giving 1,000 international units daily by mouth. There is usually a latent period before an effect is established, and one should consequently persist in this dose for at least a fortnight. At the end of this time evidence of progress or otherwise should be sought from the records of frequency of hot flushes and from the microscopical examination of the vaginal smear, and with the aid of these indicators the dose should be cautiously raised until the correct level is established. From this plateau one should equally cautiously descend. The symptoms can usually be kept under control by oral administration, but some of the more serious manifestations, such as severe attacks of mental depression, may require relatively high doses by injection. Such injections should be administered twice weekly and intramuscularly. There are certain disadvantages of high-dosage therapy. The patient may complain of unpleasant moliminal symptoms, or she may actually experience a "period," which is in fact an oestrin-withdrawal bleeding, some days after the cessation of the course of treatment. Unless previously warned of this possibility she is apt to be alarmed and to lose confidence in her medical attendant. High-dosage therapy should never be continuous, but always intermittent; otherwise it may cause tenderness and swelling of the breasts, cystic endometrial hypoplasia, or deleterious effects from prolonged inhibition of the pituitary.

The beneficial results of successful oestrin therapy include, apart from the relief of symptoms, the development of a feeling of well-being, and in some cases a return of sex desire.

Sequels of the Menopause

There are certain late sequels which may follow a symptomless menopause and occur as late as six or seven years after the cessation of the menses. These are directly

due to ovarian deficiency, and remarkably satisfactory results have followed treatment with oestrin. To one group belong the conditions resulting from the lack of ovarian stimulus to the external genitalia, such as atrophic senile vaginitis and ulceration, pruritus and kraurosis vulvae, associated with dyspareunia as the result of the shrunken and tender introitus, and, according to some authorities, leucoplakia vulvae. Another group consists of a number of skin lesions, which are gradually becoming recognized as being associated with the menopause. One example is a patchy keratosis which is typically confined to the palms of the hands and the soles of the feet, and which appears to benefit from oestrin therapy.

"NIGHTMARE'S NEST"

LONDON SEEN AS AN INFERNO

It is commonly held that the habit of understating one's case is peculiarly a British, even an English, monopoly. If it is primarily, as some contend, an affectation or a piece of illogical hypocrisy, it is so extraordinarily effective that it has become almost part and parcel of the English method of conducting controversy. But it does not appeal to everybody, and conspicuously not to Mr. Robert Sinclair, whose savage attack on London, Londoners, and London government, entitled *Metropolitan Man*,[1] overstates so grossly and unfairly what might (or might not) have been a good case, if it had been put with moderation, that it is bound to have an effect exactly opposite to that which its author may be assumed to have desired—that is, the general uplift of our social conditions. After 323 pages packed with choice and savage invective against London and everything connected with it, including politicians of all parties, he concludes with a note to the reader in which he claims that his book is "not intended to be a vehicle of opinion," that his presentation of statistics is "common-sense arithmetic," and that his virtue lies in the disinterment from Blue Books and similar publications of guaranteed "facts."

The sensationalism and the violence of Mr. Sinclair's criticisms, the long list of sources (given at the end of the book) from which his statistics have been derived, and the implied failure of preventive medicine to remedy the dreadful state of public health in London will probably lead thoughtful laymen to ask members of the medical profession whether Mr. Sinclair is right or wrong, or perhaps how far he is right and how far he is wrong. It is therefore advisable that some critical examination of the statistics presented should be made in order that doctors may be able to assist the layman on such points. It is not enough to say that Mr. Sinclair is a sensation-mongering pessimist, deliberately shutting his eyes to everything that is good, ignoring purposely (as he himself confesses, on page 20, that he does) the great and steady improvements of the last two or three generations, and twisting facts and statistics to suit his preconceived ideas and prejudices. It is necessary to see where and how he has erred in arriving at conclusions which to anyone who knows London are so obviously fantastic.

Tuberculosis in the Metropolis

No better illustration can be selected, perhaps, than his treatment of the tuberculosis figures for London. Everyone knows that for sixty years past tuberculosis has been a steadily declining disease, and that its control is in fact one of the "high spots" of preventive medicine. Readers of *Metropolitan Man* might well conclude that the exact contrary is the case; for Mr. Sinclair, out of the masses of statistics at his disposal, picks out for his sole quotation the (indisputable) fact that in 1930 there was a definite and considerable increase in the mortality rate from tuberculosis amongst females in the 15 to 25 years age group, and makes great play with this regrettable and unexplained occurrence. It is therefore a matter of public interest and public concern to state quite definitely that since 1930 the rates of this particular group have declined, as in all other groups they have been for fifty or sixty years declining, and to put down in black and white the broad facts about tuberculosis as a whole. The death rate in London from tuberculosis—all forms, not pulmonary tuberculosis alone—has been as follows:

1891–1895,	yearly	average	per	1,000	living, 2.63
1896–1900	"	"	"	"	2.44
1901–1905	"	"	"	"	2.15
1906–1910	"	"	"	"	1.87
1911–1915	"	"	"	"	1.78
1916–1920	"	"	"	"	1.77
1921–1925	"	"	"	"	1.20
1925–1927	"	"	"	"	1.06
1933			"	"	0.93
1934			"	"	0.87
1935			"	"	0.79

But not a line or a word of Mr. Sinclair's would lead any reader to suspect that progress on this astonishing scale has been and is being achieved by the people he spends his time in abusing. As for his particular age and sex group, the L.C.C. reports show that in 1930 there were 1,229 notifications—the deaths are not given separately every year—and that in 1934 there were in the same group 1,060 notifications; in 1935 967 notifications; and in 1936, 931 notifications. In connexion with tuberculosis in children he has bitter and burning words to say about the maiming and crippling brought about by the surgical forms of the disease; but he does not tell his readers that whereas fifteen years ago the distribution of Lord Mayor Treloar's Christmas hampers for cripples involved picking and choosing among the applicants, nowadays there are not enough cripples to go round; nor does he quote the figures that he might have got from one of the actual documents which (in this connexion) he quotes—namely, that tuberculosis in children caused 10,637 deaths in England in 1914 and 6,053 in 1924.

More "Common-sense Arithmetic"

When Mr. Sinclair ventures on prophecy he is, of course, less amenable to criticism—anyone can prophesy, and no one can say for many years whether the prophecy is right or wrong. In London there were in 1935 575 cases of suicide: Mr. Sinclair's handling of this figure is to commit himself to the statement, emphasized in bold type on the dust wrapper, that "ninety thousand future suicides are walking the streets of London to-day." It is not unfair to say that if his prophetic powers are on a par with this "common-sense arithmetic" no one need pay much attention to his anticipations. Elsewhere he proceeds to examine maternal mortality, which he says has "grown worse" in the last twelve years: here, too, it is profitable to study the actual London figures, which are as follows: 1924, 3.08 per thousand births; 1925, 3.19; 1926, 3.35; 1927, 2.91; 1928, 3.59; 1929, 3.61; 1930, 3.33; 1931, 3.81; 1932, 2.99; 1933, 3.66; 1934, 2.80; 1935, 2.58 (the lowest on record).* He further names four Continental countries where the figures are stated to be lower; but he does not say whether, as in London, the statistics include deaths from abortion, which very heavily weight the figures in this country.

On the nutrition of school children his presentation is equally untrustworthy. He says that fewer than 1 in 6 of London children "appear to be adequately nourished," and that 5.7 per cent. are definitely undernourished. This is an interpretation of the Board of Education reports which in our judgement distorts the facts and the truth. The actual number of really and incontrovertibly under-

[1] *Metropolitan Man. The Future of the English.* By Robert Sinclair. (Pp. 365. 10s. 6d. net.) London: G. Allen and Unwin. 1937.

* The provisional approximate figure for 1936, supplied by courtesy of the M.O.H. for London, is 2.08.

nourished children in the Council schools—not in London as a whole, be it noted—is about 0.08 per cent.; the number of the adequately nourished is about 94 per cent.

There are many other counts in the indictment upon which equally damaging criticisms might be founded. According to this book there is not a single aspect of London life and London government which is not a seething mass of mismanagement and corruption. Curiously enough, hundreds of intelligent foreigners who have visited London during this century and investigated the methods of its administration have gone away full of admiration and determination to bring their own domestic affairs up to a similar standard if possible. That things are perfect, or anywhere near perfection, is the very last impression that anyone ought to propagate, we agree; that Mr. Sinclair is animated by a sincere desire for amelioration, we agree; that the medical profession has a special duty in relation to the education of the public in matters of public health, we agree. But we do not agree that to shut one's eyes to the genuine and rapid progress of many years past, and to the signs of its continuance at an accelerating rate, is a useful contribution to the cause; and, most emphatically of all, we do not agree that the garbling of statistics serves any useful purpose—and in our view that is an act of which Mr. Sinclair stands definitely convicted. This is an understatement of London's case against Mr. Sinclair.

HENRY ROBINSON.

MEDICINE IN THE LONDON COUNTY HOSPITALS

The varied and extensive hospital services provided by the London County Council are the subject of two annual reports—the first, already reviewed, dealing mainly with the administrative aspect, and the second a medical supplement compiled by members of the Chief Medical Officer's staff.[1] This latter report contains a series of articles describing the work carried out in various special units which have been established at the county hospitals. One of these is the puerperal fever unit at the North-Western Hospital in connexion with which an analysis is given of 156 patients with local uterine sepsis admitted during the year under review, with eleven deaths. Another is the radiotherapeutic clinic at Lambeth Hospital, with 567 new patients placed on its records during the year. There is also a plastic surgery unit at St. James Hospital, where 386 operations were performed, including fifty-nine Thiersch grafts. Two thoracic surgery units have been established, at St. Andrew's and St. James Hospitals, and here, on patients about half of whom were suffering from chronic pulmonary tuberculosis, a total of 285 operations were performed, principally thoracoplasty, thoracoscopy, and cauterization of adhesions, and phrenic evulsion. In the goitre clinic at the New End Hospital operations were carried out on 100 patients, with no mortality. Brief reports are included from the arthritic unit of St. Stephen's Hospital, the diabetic clinics at St. George-in-the-East and St. Peter's, the congenital syphilis unit at St. John's, the urological unit at St. Mary Abbots, and the out-patient fracture unit at Fulham Hospital. At the last, which is the most recent of these special units, from thirty-eight to forty-five cases are seen at each weekly session.

Research in Council Hospitals

The report also includes a number of articles written by members of the Council's medical staff regarding unusual cases. Thus the case of agranulocytosis which was the subject of an inquest at Shoreditch some time ago (*British Medical Journal*, December 7, 1935, p. 1135) is set out in full detail. Two cases of idiopathic steatorrhoea are described, and one case of Rendu-Osler-Weber disease, a hereditary condition characterized by haemorrhages due to multiple telangiectases. A case is also recorded of primary tuberculosis of the spleen; only six like cases could be found in the British journals, two of which were described by Carling and Hicks in the *British Medical Journal* of August 15, 1925. From another article it appears that the condition of acute dilatation of the stomach is not so uncommon as is often thought; at Bethnal Green Hospital during the past five years five cases have been recognized and treated successfully.

A considerable amount of research is carried on every year in the diagnosis and treatment of infectious diseases admitted to the fever hospitals. In the present report five medical superintendents write on various conditions. Dr. J. D. Rolleston reviews 104 cases of acute poliomyelitis admitted to the Western Hospital in eight years. Only four deaths occurred in this series, all from ascending paralysis. Apart from a number of cases treated by the Drinker respiratory apparatus, the patients did not receive any active treatment, but the affected limbs (usually the leg) were put in splints as recommended by the consulting orthopaedic surgeon. In fourteen cases the symptoms were of sufficiently recent onset to justify giving convalescent serum, but in no instance did demonstrable benefit result. In a paper on whooping-cough Drs. Mitman and Ronaldson state that drugs and vaccines exert no consistent influence once the disease has become established, and though attempts to produce an efficient vaccine are being made, no real success has as yet been achieved. It is pointed out that whooping-cough is responsible for the longest average stay of any of the diseases treated in a fever hospital (the average in London is fifty-six days), yet the actual period during which there is danger to the patient on account of complications or to the community on account of infectivity rarely exceeds four weeks. If the public could be educated to the fact that whooping as such is not infectious many cases could be discharged from hospital much earlier.

Maternal Deaths

A section of the report is taken up with a series of articles tracing the origin and development of services which the old Local Government Board placed upon the Metropolitan Asylums Board and which have been inherited by the Council. These include a hospital for the treatment of venereal diseases in women, where there were 369 admissions in 1935; hospitals and sanatoria for pulmonary tuberculosis; a special hospital for the treatment of skin diseases; a hospital for the isolation and treatment of contagious ophthalmia; and a hospital for patients suffering from diseases of the ear.

Finally, there is an analysis by Dr. Letitia Fairfield of the deaths of women in childbirth in Council hospitals. During the year under review the number of women confined in these hospitals was 15,280, over 2,000 more than the previous year, and 50 per cent. more than in 1931. Of this number sixty-four died, the deaths in forty-two cases being returned as due to pregnancy or confinement, and in twenty-two as associated therewith. A further twelve women died in hospital after having been delivered elsewhere. There were fifty deaths from abortion (out of 3,607 cases treated) and four from ectopic gestation (out of 136 cases). The deaths from sepsis fell from fifteen in 1934 to twelve in 1935. Caesarean section was performed on 120 patients, with eight maternal deaths, nine stillbirths, and five deaths of infants under ten days. As for the forty-two deaths which were due to pregnancy or confinement after delivery had taken place in hospital, twelve were due to puerperal sepsis, nine to toxaemia, nine to haemorrhage, eight to obstetric shock, and the others to rupture of uterus and puerperal mania, while one patient (with a greatly enlarged thymus gland

[1] London County Council. Annual Report, 1935. Vol. 4 (Part III), Public Health—Medical Supplement to the Report on the Hospitals Services. P. S. King and Son, Ltd., Westminster. (5s.)

found post mortem) died under an anaesthetic. Among the twenty-two deaths associated with pregnancy or confinement the most common cause of death was heart disease. One satisfactory feature is that among the 15,681 patients attending the Council's ante-natal clinics only eight cases of eclampsia developed, with one death.

Council Hospital Finance

Figures for hospital costs, as the recent report of a Departmental Committee has shown, can be very misleading, especially when they are set out as cost per patient or occupied or available bed, because the circumstances of hospitals are so diverse. If such statistics might ever be expected to tally it would be in a series of hospitals all admitting the same kind of cases and all belonging to the same public authority. Yet if one takes the twenty-seven general hospitals of the London County Council for the treatment of "acute" medical and surgical patients, as set out in the annual report,[2] very considerable differences are revealed. Omitting from the comparison Hammersmith Hospital, where the British Post-Graduate School is established, and which is exceptional in many ways, we find the net cost per week per occupied bed ranging from £2 9s. 6d. at St. James Hospital, Balham, to £3 9s. 6d. at Highgate Hospital and at Mile End. The average for the whole range of these hospitals is £3 3s. 11d. per week, leaving out of account any charges for superannuation funds, pensions, or other establishment charges, and annual charges in respect of capital outlay, which, if they were apportioned, would bring up the cost to £3 17s. 7d. Of the weekly figure, provisions and stimulants roughly cost 6s. 4d., surgery and dispensary 4s. 3d., medical services 4s. 4d., nursing services 9s. 9d., general domestic services 9s. 11d., heating and lighting 4s. 11d., and laundry 3s. 6d. The item for medical services differs remarkably. At St. Mary, Islington, it is 3s. 5d., and at St. Pancras 5s. 6d. The nursing services also cost much more at some hospitals than at others. At St. Peter's the cost of the nursing service per occupied bed is 12s. 5d. and at St. Mary, Islington, only 7s. 10d.

The cost in fever hospitals works out at very much the same total—£3 15s. 9d. a week—but here again the cost varies very considerably among the nine comparable hospitals, from £3 8s. 8d. at the North-Western to £4 9s. 8d. at the Brook. Nursing costs at fever hospitals are heavy, ranging about 2s. 6d. per week per bed above those at general hospitals for acute cases. The tuberculosis hospitals cost less, the average for the group being just below £3 a week, and in the children's hospitals the cost is lower still.

Many figures of much interest to statisticians and hospital administrators are to be found in this report. The ambulance service, for example, is unexpectedly costly, amounting to 13s. for each patient carried. The total number of articles washed at hospital laundries in a year is over 55 millions, and the average cost works out at just under one penny each. The London County Council during the year ending March 31, 1936, spent in salaries and wages on its hospital service £2,109,000 as compared with £1,758,000 five years ago, and on medical and surgical requisites and pathological services £220,000 as compared with £137,000.

[2] London County Council. Annual Report, 1935. Vol. 4 (Part II), Public Health—Hospital Finance. P. S. King and Son. (1s.)

Professor Aristide Busi, director of the Institute of Medical Radiology in Rome, and Professor Arthur C. Christie of Washington have been elected honorary members of the German Röntgen Society; and Dr. Wilhelm Weygandt, professor of psychiatry at Hamburg, has been made an honorary member of the Rumanian Society of Psychiatry.

THE HEALTH OF SCOTLAND

REPORT FOR 1936

Commenting on the general health of the people of Scotland the report of the Department of Health for 1936[1] states:

"On the whole the gradual trend towards better health continues, but there is cause for regret in that the low record death rate for children under 1 year attained during 1935 (76.8 per 1,000 births) was not held during 1936, when the rate rose to 82 per 1,000. High infantile and maternal death rates constitute one of the most stubborn and difficult of Scottish health problems. There is no doubt that nutrition could be further improved by supplementation of diet and other appropriate measures, particularly in the case of expectant and nursing mothers and pre-school children, but examination of unemployed males, even after prolonged periods of unemployment, shows that their nutritional states, as assessed by body weight or by blood haemoglobin content, is not sensibly inferior to that of the employed, and does not show any progressive deterioration with duration of unemployment."

Causes of Death

The general death rate for 1936 was 13.4, as compared with 13.2 in 1935. The principal causes of death were heart disease (13,696), malignant tumours (7,907), cerebral haemorrhage (6,365), pneumonia (4,793), and tuberculosis (all forms) (3,663). The report makes special comment upon the large number of deaths of young people from heart disease of rheumatic origin; year after year at least 1,000 lives are lost from this cause in Scotland. The number of deaths from tuberculosis shows a slight increase over the low record figure for 1935. Technical improvements have made possible the use of portable *x*-ray apparatus in areas remote from hospital facilities, and for some time a portable plant has been in use in the county of Dumbarton, with excellent results. There has been a gratifying increase in the care given to the supervision of active cases of tuberculosis in order to prevent their becoming sources of infection.

Infectious Diseases and Health of Children

Except for a sharp rise in the incidence of measles the prevalence of infectious diseases showed no considerable departures from the normal. In the autumn poliomyelitis was unusually prevalent, especially in South-East Scotland. Few of the cases came to light before the onset of paralysis, but most of them received treatment in large, well-equipped hospitals, and steps were taken to provide adequate after-care. The number of school children who received medical treatment under school health schemes has increased from 210,000 in 1928–9 to 290,000 in 1935–6. The report states that although the incidence of physical defects is still too high, there has been steady improvement of recent years in the general health of school children. Average weight and height has increased noticeably. In the West Central industrial belt since 1929 the percentage of children suffering from anaemia has fallen from 2.03 to 1.14, and the percentage suffering from rickets from 1.34 to 0.79. With regard to nutrition, returns relating to the medical inspection of school children show that of 241,565 children examined during the year the number whose state of nutrition was classified as "below average" was 11,855, or 4.91 per cent., while the number classified as "very bad" was 430, or 0.18 per cent. This represents an improvement on the preceding year, when the corresponding percentages were 5.35 and 0.23 respectively.

Maternity

The maternal mortality rate for the year was 5.6 per 1,000, as compared with 6.3 for the year 1935. The report indicates that progress continues to be made in the

[1] Cmd. 5407. H.M. Stationery Office, 120, George Street, Edinburgh. (3s.)

development of ante-natal and post-natal services provided by local authorities, and that a number of new maternity institutions are in course of erection or projected. There are now no fewer than 254 maternity and child welfare centres in Scotland and 1,085 nurses employed by local authorities as health visitors or school nurses. Four new maternity and child welfare centres were provided during the year, and proposals were approved for five centres to replace those in which the existing accommodation was unsatisfactory.

Housing

Overcrowding in Scotland is relatively six times greater than it is in England. More than 22 per cent. of Scottish houses are overcrowded, and a minimum of 160,000 new houses is needed merely to relieve these conditions. Fully one-third of all the houses in Scotland are without a separate water-closet, and a still greater number are without a bath. The surveys carried out by local authorities under the Acts of 1930 and 1935 show that it will be necessary to provide nearly a quarter of a million houses in order to wipe out the slums and to put an end to overcrowding. Contracts for over 27,000 State-assisted houses were approved by the Department during the year, an increase of 65 per cent. on the total approved during 1935. Owing mainly to the difficulty of obtaining sufficient skilled labour, however, this increased activity was not reflected in building progress, and only about 16,000 houses were actually completed during the year. In the light of the total measure of Scottish housing needs, the report concludes, an annual output of 16,000 houses by local authorities cannot be regarded as satisfactory.

Water Supply and Drainage

The Department held a number of conferences with local authorities during the year with a view to the establishment of regional water supply schemes under which local authorities in the same drainage area would act in combination for water-supply purposes. Considerable progress has also been made with the provision of new sewerage and sewage disposal schemes, and the Commissioner for the Special Areas has undertaken to give financial assistance to schemes of this nature whose capital cost totals over £120,000.

Highlands and Islands Medical Service

The Highlands and Islands Medical Service continues to operate upon established lines, and approximately £78,000 was expended on this service during the year. Important developments are projected in the provision of new hospitals, and good reports continue to be received of the general practitioner and nursing services provided with assistance from the Highlands and Islands Medical Assistance Fund. The aeroplane ambulance has now become a recognized means of transporting urgent cases of illness from the islands to Renfrew.

National Health Insurance

As compared with the previous year the number of persons coming within the scope of the national health insurance scheme rose from 1,933,000 to 1,967,000. Continued improvement in industrial conditions has been reflected in a considerable increase in the contribution income. There was, however, a large increase in the total expenditure on sickness and disablement benefits, which rose from £1,762,000 in 1935 to 1,875,000 in 1936, despite the fact that the incidence of influenza was much lower in 1936 than in the previous year. The Department states that it is difficult in face of all the evidence to the contrary to believe that this increased morbidity is due to any appreciable deterioration in the health of the insured population. It is to be attributed rather to the fact that as public opinion becomes attuned to higher health standards there is an increasing readiness to stay off work during illness, and a tendency to remain off longer in an effort to secure full restoration to health.

QUEEN CHARLOTTE'S HOSPITAL

PROGRESS IN RESEARCH AND REBUILDING

No. 10, Downing Street opened its doors to the friends of Queen Charlotte's Hospital on April 6, when the annual meeting took place of the National Council of the Mother-Saving Campaign. Princess MARIE-LOUISE presided. The annual report, presented by Mr. SEYMOUR LESLIE, stated that during the ten years that had elapsed since the first meeting of the Council over £250,000 had been raised, of which £34,000 had been found since the last meeting. The rebuilding fund now stood at £231,564. Queen Charlotte's was the only large-scale combined research and treatment centre in the world for puerperal fever. Though practically unendowed and actually poor for its size, Queen Charlotte's was engaged in a vitally important national research, for which and for the rebuilding scheme help was badly needed.

Dr. T. WATTS EDEN, senior consulting obstetric surgeon to the hospital, spoke on the progress made during the past year and the future plans. He thought that nobody acquainted with the structure in Marylebone Road would be surprised that a rebuilding programme had been undertaken. A beginning had been made by building an isolation hospital and research laboratory on a large new site at Hammersmith. Valuable scientific work, now generally recognized all over the world, had been done by the research staff. Recently there had been submitted for trial a new remedy from Germany for the treatment of puerperal fever, and during the year in which it had been tried it had given very encouraging results. The organization at Hammersmith was an ideal centre for the scientific testing of new remedies—so important if exaggerated claims were to be avoided.

A Housing Problem

The problem now before the hospital, Dr. Eden continued, was that of providing accommodation for the 1,500 patients who, metaphorically speaking, were now annually turned away from its doors. The old building could neither be reconstructed nor modernized; the only solution was to rebuild. To begin by building the whole block would be completely beyond present resources, and so a definite start had been made by the erection of a portion which would provide 112 additional beds, and this, while not enabling the hospital completely to meet the demands made upon it, would go a long way in that direction. There was the difficulty, however, that when the new block was opened it would require a large staff of nurses, and so for the present the top floor would have to be used for their accommodation, reducing the number of additional beds available for patients to 82. It was proposed to use some of the space to provide accommodation for patients of moderate means who could not afford ordinary nursing home fees. Small single-bed wards to the number of fourteen would be reserved for patients of this class, and attached to these wards there would be a special set of delivery rooms kept completely for private use. The patients would be received at a charge which would cover no more than their actual cost to the hospital. In connexion with the new hospital it would be necessary eventually to provide accommodation for a large number of students. The cost of carrying out the whole scheme would be £500,000. Dr. Eden concluded with a reference to Mrs. Stanley Baldwin's interest whereby Queen Charlotte's had been in a position during the past two or three years to provide the services of a skilled anaesthetist for every patient confined in the hospital. The hospital had, however, been in search of a method which could safely be used by midwives, and, with the co-operation of the British College of Obstetricians, such a method had apparently been found.

Mrs. BALDWIN added a tribute to the work done by the doctors and nurses at Queen Charlotte's, especially for the amelioration of suffering in childbirth. She also sug-

gested that Queen Charlotte's, through its ante-natal clinic, should carry out experiments on the bearing of nutrition on safe maternity. It was mentioned by Mr. H. B. STOKES, secretary-superintendent of the hospital, that a certain number of anaesthetic machines of the Minnitt type, but incorporating improvements by Mr. Rivett, and known as the "Queen Charlotte's model," had been distributed to the districts, and were being used by midwives with great success.

THE BOURNEMOUTH TYPHOID OUTBREAK

JUDGE COTES-PREEDY'S REPORT

The following is the report by His Honour Judge D. Cotes-Preedy, K.C., M.A., LL.M., L.S.A., on the epidemic of typhoid fever in Bournemouth and neighbourhood in the late summer of 1936. We have inserted cross-headings.

Nature of the Inquiry

At the joint invitation of the boroughs of Bournemouth, Poole, and Christchurch, and the Anti-Typhoid League, I undertook to hold an inquiry into certain allegations, criticisms, and demands of the League in connexion with the outbreak of typhoid fever which occurred in the said boroughs during August and September last.

I sat at the Town Hall, Bournemouth, on February 3, 4, 5, 12, and 13, and at the conclusion of the inquiry reserved my determination of the matter. I would point out that in no sense did the inquiry proceed on formal or legal lines, and by general consent I did not strictly enforce the rules of evidence. The extensive latitude allowed to the spokesmen on behalf of the League and the disclosure of all material facts requested by me from the officials of the boroughs will, I trust, reassure all interested and concerned that the inquiry was exhaustive.

Previous to the sittings the Anti-Typhoid League formulated in writing certain allegations and demands, and to these the three councils replied in writing. It was mutually agreed between the contending parties that the sittings should be held *in camera*, and with this decision I agreed. In consequence I feel I am able to set forth the view I have formed in a manner conducive to brevity and without detailed examination of the evidential value of the information laid before me. I trust this course will be less likely to cause distress or annoyance to any concerned or in any way inflame any sores caused by the public agitation before the inquiry was decided upon.

At the outset I would like to make it clear that it was no part of my duty to decide as to the source of the typhoid fever outbreak—this doubtless will be amply dealt with by the Ministry of Health in its forthcoming report. But the inquiry proceeded on the assumption that the source of the trouble was to be found in milk supplied by a certain dairy.

The Allegations

Mr. S. H. Wall, chief spokesman on behalf of the Anti-Typhoid League, and who discharged a difficult task with ability, insisted that the League had not come forward to emphasize private grievances. It did not seek to blame individuals, but rather to condemn regulations under which the latter acted, which it contended had caused the uneasiness that existed. The "vital allegations," said the speaker, relied upon by the League were that the councils, having ascertained that there were cases of typhoid in their area, had failed in their duty

(i) by not announcing the fact in a clear and unequivocal manner in the Press;

(ii) by not distributing notices from house to house setting forth the usual symptoms of such disease, and at the same time giving advice as to prophylactic measures, and

(iii) by endeavouring to conceal from the public the true facts about the outbreak.

Other allegations described as "important" were

(iv) that the councils should have left in their homes all patients for the care and isolation of whom reasonable facilities existed in their own houses in order to be able to remove immediately to isolation hospitals patients for the care and isolation of whom no reasonable facilities existed in their own homes, and that in consequence certain patients for whom no facilities existed in their homes were unable to obtain immediate admission to isolation hospitals or were compelled to undergo long journeys to isolation hospitals in other areas,

(v) that improper pressure was brought to bear on persons with facilities at home to induce them or persons in their charge to be removed to isolation hospitals, and

(vi) that orders under the provisions of the Public Health Act, 1875, were obtained, or sought to be obtained, without the necessary conditions precedent to the granting of such orders being fulfilled.

Though not set forth in the "allegations and demands," Mr. Wall, in the course of his speech, alleged that the councils had concealed the true facts of the outbreak in deference to the desire of the majority of people who were financially interested in the district. He added that he did not suggest any deliberate plot by anybody in particular, but described the situation as that "of an atmosphere which was created to save the towns' revenue."

Early in the inquiry it was clear that the allegations had little or no relation to the borough of Christchurch, and I was able to release the officials of that borough from participation in the inquiry.

Questions of Responsibility

In the first place it should be borne in mind that from the onset of the outbreak the responsible officials of the boroughs had the assistance and guidance of the Ministry of Health in the person of the late Dr. Shaw, the well-known epidemiological expert, whose recent death is greatly to be deplored. I am satisfied that his views and advice were accepted and acted upon by the local officials, although they admitted their responsibility for any orders or directions that were given.

Secondly, I would point out that it was established that the symptoms of paratyphoid and typhoid are extremely difficult to differentiate in the early days of the disease, while in addition there are certain ailments of a less serious import, such as fool poisoning, which are liable to occur during the summer and autumn months and present similar symptoms at the outset.

Again, it is important to realize that the laboratory tests for paratyphoid and typhoid do not produce immediate results leading to certainty. Though perhaps of little importance, it appears that "paratyphoid" and "typhoid" are classed together under "enteric fever" in the returns of the Registrar-General, which may tend to confuse the minds of the uninitiated.

Dealing with the allegations (i), (ii), and (iii), it is common knowledge that sporadic cases of typhoid fever frequently occur all over this country, and in my view the officials of the boroughs would have acted unwisely if, directly cases of illness suspected to be paratyphoid or perhaps typhoid had appeared, they had sponsored an alarmist Press announcement of an existing typhoid epidemic. Moreover, the difficulty of diagnosis did call for caution, and had such a pronouncement been made before the precise nature and source of the disease had been determined a hasty flight of people away from the district carrying the disease to all parts of the country might have occurred, and thereby prevented the localization of the trouble. In my opinion the contention that notices should have been distributed to every house setting forth the symptoms of the disease, with the further information as to prophylactic measures, is not well founded, as by such a course public alarm would have been unnecessarily aroused.

In my view once the situation was established there was no endeavour on the part of the authorities to conceal the true facts about it.

Nursing in Hospital or at Home

If the charges (iv) and (v) had been in any degree supported by reliable evidence they would possibly have called for serious consideration, but in my opinion there was no evidence given tending to establish such allegations. The fullest information was afforded to me showing that the sudden and serious difficulty of accommodating a large number of patients was tackled with great efficiency by the medical officers and the Health Committees.

Under the advice of the Ministry of Health's representative isolation of patients in hospital was urged, and in my opinion rightly so. Naturally one is able to understand and sympathize with the feelings of anxious relatives for the patient's own home to be used, but from a public welfare point of view there seems to be no doubt isolation in a hospital under strict and careful supervision is the more desirable course. It is not without interest in this connexion to note that the evidence showed that in Poole, out of 197 cases treated in hospital twelve died, and that of thirteen cases nursed in their own homes five died. But I do not suggest any certain deduction can be drawn from these figures.

In one case in Poole it appeared that the medical officers strongly urged upon those in charge to allow the patient to be removed, which was strongly resented, and that an application for a magistrate's order ordering the removal was unsuccessfully made. Apart from this case, which in my view did not exhibit "undue pressure," no reliable testimony was forthcoming showing that such pressure had been exerted over relatives or patients themselves. From several witnesses I received favourable accounts of their treatment while in hospital.

Vindication of Officials

On reflection I feel sure that the members of the Anti-Typhoid League will share my regret that the charge was ever put forward alleging that the true facts concerning the outbreak were concealed owing to the financial interest which the majority of the inhabitants had. There was not a scintilla of evidence put forward to support such a serious allegation. Moreover, I am confident no one could believe that officials responsible for the health of the community would lend themselves to such a proceeding. There were other criticisms made by the League, but they were of a minor character and do not call for serious consideration.

I have no hesitation in saying that the inhabitants of the three boroughs should realize that Dr. C. F. Pedley, deputy medical officer of health for Bournemouth, Dr. R. J. Maule Horne, medical officer of health for Poole, Dr. Walter Asten, chairman of the Bournemouth Health Committee, and the other officials of the boroughs grappled with a sudden and serious situation with efficient vigour and a keen appreciation of the proper steps to take in order to deal with the emergency that faced them. They deserve the confidence of their fellow citizens.

In conclusion I would like to emphasize the fact that all who took part in the inquiry evinced an earnest desire to sift thoroughly all the matters in question and with the ultimate benefit of the three boroughs in mind. This heartens me to believe that any bitterness engendered before the hearing may have been permanently dispelled. I must thank all those who addressed me, and others who gave me their kind assistance during the inquiry.

D. COTES-PREEDY.

April 4,1937.

In Belgrade there is one doctor to every 300 inhabitants. There is a total of 789 male and 171 female practitioners. The economic conditions under these circumstances are very unfavourable, and are believed to account for the high mortality in the medical profession, especially among the younger doctors.

Reports of Societies

ACTIVE IMMUNIZATION AGAINST DIPHTHERIA

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on April 9, with Surgeon Rear-Admiral S. F. DUDLEY in the chair, a lecture was given by Dr. CLAUS JENSEN, director of the department of biological standards, State Serum Institute, Copenhagen, on active immunization against diphtheria, with special reference to a combined subcutaneous and intranasal method.

Dr. Jensen said that it was with diffidence he spoke to an English audience on a subject on which so much excellent work had been done in this country, especially under the aegis of the Medical Research Council. In Denmark the actual number of individuals inoculated against diphtheria was relatively small, owing partly to the fact that the number of cases of diphtheria had been low for some years, with no real epidemics, and also to the unwillingness of the authorities of the State Serum Institute to endorse propaganda for mass immunization until a thoroughly efficient and convenient method was available. In some countries the three-injection method of Ramon had been tried, but for mass immunization it had several drawbacks. From the point of view of practical administration it was desirable to obtain a diphtheria antigen of such marked immunizing power that a single injection would confer a sufficient degree of immunity without causing undue local or general reactions. Much work had been done in recent years towards making effective, easy, and cheap this ideal of the public health administrator.

In Denmark the preparation chosen was purified toxoid with aluminium hydroxide. The toxoid used was a diphtheria toxin detoxicated by formaldehyde and heat, and put through a thorough process of purification, which removed most of the unspecific, more or less decomposed proteins, salts, and other substances present in the crude toxoid. Before distribution the purified diphtheria toxoid was mixed with a sterile suspension of aluminium hydroxide. For details as to the properties of this substance he referred his audience to the work of Schmidt and Hansen (1933, *Acta path. et microbiol. Scandinav.*, Supp. 16.). For active immunization by a single subcutaneous injection from 1 to 1.5 c.cm. of this preparation, equal to 35 to 50 flocculation units of the purified toxoid, stimulated antitoxin production in 96 to 98 per cent. of cases. In children below 7 years of age the injection of antigen seldom caused reactions. In 82 per cent. there was no reaction, in 11 per cent. a very slight local reaction, and in 7 per cent. moderate to strong local reactions, or possibly some fever. Older children showed more often a mild local reaction within the first twenty-four hours after the injection, appearing as a little swelling and redness at the site, or sometimes a stronger local reaction accompanied by a moderate rise of temperature. In adults such reactions were to be expected more often, but they lasted as a rule only for a day or two, and no serious condition resulted. The antitoxin production might begin three to four days after the injection of antigen, and as early as two weeks afterwards immunity might be well developed. From experience so far gained it appeared as if the immunity to diphtheria acquired by the use of this antigen preparation lasted for a considerable time. The effect of increasing the dose up to as much as 400 flocculation units had been studied, but no significant increase in response was found. Doses smaller than 35 units had not been tried.

Intranasal Instillations

Attempts to improve the effect of the single-injection method by increasing the dose given had not been very

satisfactory, especially from the point of view of duration of immunity, in the group of patients who responded most poorly. Therefore attention had been turned to a combination of subcutaneous and intranasal methods of administration. In the first place Dr. Jensen detailed some results of the use of the combined method in experiments on rabbits. The antitoxin response to nasal instillations of increasing doses of purified toxoid showed that in previously immunized rabbits, when compared with rabbits untreated, the nasal method acted as a potent secondary stimulus. The purified toxoid used intranasally was absorbed very readily, but the effect was too poor to permit of dependence on the nasal method alone. In rabbits the single subcutaneous injection of the purified toxoid was followed four weeks later by three or six nasal instillations at stated intervals, and this was found to produce, even in otherwise poor responders, an excellent effect and duration. The toxoid could be given intranasally without risk, in big doses, and could be applied at the most opportune moment. Even the shortening of the interval to two weeks instead of four did not prevent the nasal instillation from acting as a potent secondary stimulus. The rabbit experiments were undertaken in such a way that parallel investigations could be made in children, the doses in the rabbits being fixed in most cases at one-tenth of the dose intended to be used in the human subject. For both the subcutaneous injection and the nasal instillation preparations of the highly purified toxoid were used, but for the nasal drops the diphtheria prophylactic was more diluted. Dr. Jensen showed tables indicating the good and uniform response in groups of rabbits.

Clinical Experience

The investigation was then transferred to large groups of children in Copenhagen institutions and to nurses. It was shown again that the protection against diphtheria afforded by a single injection under the skin of the purified diphtheria prophylactic with aluminium hydroxide was reinforced and prolonged considerably when, four weeks after the injection, the children were given a few drops of a highly purified and diluted prophylactic intranasally. This treatment was repeated one week later and two weeks later, so that each child received three instillations altogether. The result showed that the group of poor responders were transformed into good ones. In at least 96 per cent. of the cases the antitoxin production was 0.1 unit or more six weeks after the injection, and nasal re-immunization one year later gave a still better response. The reactions to the original injection were as already indicated, but there were no reactions to the intranasal instillations.

In the next place 596 probationers were examined, and, thanks to their generous co-operation, three different methods of immunization were tried. Some were subjected to exclusively nasal instillation of the purified toxoid; others received repeated subcutaneous injections of Schmidt's toxoid; and 319 were immunized by the combined method, the dosage being the same as for the children—namely, for the injection, 1 to 1.5 c.cm. of the purified toxoid with 10 volumes per cent. of the aluminium hydroxide, followed, after an interval of four weeks, by three or six nasal instillations (25 flocculation units) at stated intervals. Antitoxin production in 94 per cent. was more than 0.01 unit, and in 85 per cent. it was more than 0.1 unit; only 1 per cent. of the cases were refractory. In rare cases there were reactions to the intranasal instillations in the shape of transitory headache, nausea, or fatigue.

Emergency Prophylaxis

These investigations had shown that it was possible to obtain very considerable immunity by purified Schmidt toxoid, one subcutaneous injection being followed by three intranasal instillations. This method had now been made obligatory for nurses in one of the large Danish hospitals. He was aware that the social and economic conditions in Denmark could not be compared with those in England, but in his country, in institutions such as schools, the practical administration of such a procedure was quite easy to arrange collectively, and in the family, in most cases, the instillation could be given by the child's mother after instruction. In infants and children up to 2 or 3 years of age the nasal instillations could easily be administered during sleep. He was convinced that intranasal applications, as a harmless means of reviving and prolonging the active immunity to diphtheria conferred by the subcutaneous injection, could be the subject of successful propaganda. The method avoided the necessity for more than one subcutaneous injection, and consequently the child was spared possible reactions. He strongly recommended that in children below 6 years of age the nasal instillations should be repeated every year in September, and at the beginning of and during a diphtheria epidemic; this applied also to older children who previously had been immunized, as the protection against diphtheria was in this way reinforced and prolonged.

While immunization by the nasal route alone gave a poor result and should not usually be relied on, yet in emergency prophylaxis at the outbreak of a diphtheria epidemic it had a role to fulfil. Dr. Jensen gave the following scheme for emergency prophylaxis:

1. Individuals not immunized previously:

(i) immediate passive immunization of all possible contacts (members of households, institutions, schools, etc., where cases had occurred) by anti-diphtheritic serum from goat or sheep; dosage, 500 units in children up to 5 years, 1,000 units in children up to 10 years, and 1,500 units in older children and adults, given intramuscularly.

(ii) Simultaneous combined subcutaneous and intranasal immunization according to the method already set out, but with an interval of only two weeks between the single injection and the first nasal dose.

(iii) Nasal immunization of specially exposed children above 15 years of age and adults by nasal instillations: six applications of 25 flocculation units over a period of twelve days.

2. Individuals immunized previously: immediate nasal re-instillations at all ages.

Discussion

The brief ensuing discussion was mostly in the nature of compliment to Dr. Jensen and his fellow workers. Surgeon Rear-Admiral DUDLEY said that if it was worth while to protect the country from diphtheria it was worth while maintaining the immunity, and to do that it was necessary to reinforce it at various periods after the original injection. He thought that from the point of view of the public health services it would be of great advantage to be able to follow up the primary injections by nasal instillations—though perhaps the mothers should not be trusted with the procedure as they were in Denmark. This purified aluminium toxoid seemed to have less objections to it than some other preparations. Professor W. W. JAMESON thought the method would be feasible with the staff of health visitors such as local authorities possessed. Dr. ALEXANDER JOE expressed some scepticism about nasal immunization. Sir HENRY DALE cited the parallel of insulin. He agreed as to the difficulty of putting these procedures into the hands of parents. On the other hand, who would have supposed, some fifteen years ago, that there would now be thousands of people of all classes in this country injecting themselves safely two or three times a day with insulin? If this could be done successfully with one preparation it might be done with another.

LOBECTOMY AND BRONCHOSCOPY

At a meeting of the Liverpool Medical Institution on March 18, with the president, Professor R. E. KELLY, in the chair, Mr. HUGH REID read a paper on lobectomy.

Mr. Reid said that he proposed to outline the common indications for and the complications following lobectomy, and to describe the technique, which was illustrated by means of a colour film. Only recently had the mortality following this operation been so lowered as to bring it within the sphere of practical surgery. Brunn described the one-stage operation in 1929, and although various refinements had been added his fundamental principles had not been altered; this was the method adopted by the speaker. It was pointed out, however, that the one-stage operation had not been accepted by everyone for every case of lobectomy; Alexander, for instance, made out a very good case for the two-stage method, particularly as regards complications. The technique of the operation was then described in detail, and the various complications which might ensue were discussed. Mr. Reid said that the greatest field for the operation was in bronchiectasis and in carcinoma of the lung. Regarding the fate of the cavity left after the operation and the reaction of the remaining lobe or lung, it had been shown that if the whole lung was removed from one side the hemithorax filled up with a reticulated fibrin, while the remaining lung increased in size by hyperplasia and hypertrophy without emphysema, and the mediastinum was pushed over, the ribs on the affected side falling in, and the diaphragm rising in an attempt to obliterate the cavity. If only one lobe was removed it was surprising to notice that after a few days the remaining part of the lung had enlarged to obliterate the cavity completely.

The Time to Operate

In the discussion which followed Dr. N. B. CAPON spoke of the great benefit which a patient of his had received from the operation described, and referred to other cases in which still more extensive lobectomy had been successfully performed. The cases required careful diagnosis and selection, with full investigation of the supposedly unaffected lobes, in order to avoid disappointments. A satisfactory course of medical treatment with postural drainage should be given a thorough trial before operation was undertaken. The ideal was, of course, to prevent bronchiectasis whenever possible, and more positive efforts should be made to attain this.

Dr. ROBERT COOPE agreed that to advise lobectomy was a serious responsibility. The physician in charge of a patient with bronchiectasis was in a difficulty. On the one hand, the operation was a severe one with a high risk, though surgeons skilled in lung surgery were now achieving far better results, especially in the young, with the development of their technique. On the other hand, the natural history of the disease made it certain that many a patient with bronchiectasis, though reasonably well at the moment, would in perhaps five, seven, or ten years' time be a distress to himself and to those about him. To wait until the patient and his friends were desperate before advising operation was fair to neither patient nor surgeon; by that time an originally unilateral bronchiectasis might have become bilateral, widespread damage to the lungs might have occurred, and in any case the patient would be a poor subject for surgery. If operation was to offer any chance of cure someone with expert knowledge of the disease had the duty of advising it, after full, careful, and unhurried consideration, at a time when the patient was fit enough to have a good chance of recovery from an extremely severe operation. That was at a time when there was a temptation to carry on with merely palliative treatment, for while the doctor knew the course and prognosis of the disease, the patient and his friends could hardly be expected to grasp it. With the modern advance in lung surgery the physician could feel reasonably happy in passing on young and otherwise healthy subjects to the competent thoracic surgeon; where older patients were concerned there was still need for the utmost caution in weighing up the pros and cons of surgical treatment, with a bias at present against it. In spite of occasional recorded cases of lobectomy or total pneumonectomy for bronchial carcinoma, both physicians and surgeons would agree from actual experience that the number of cases suitable for this procedure must be very few indeed.

Mr. H. V. FORSTER said that Frenckner of Stockholm had described a close-fitting bronchial catheter and an ingenious instrument called the "spiropulsator," which could be used for producing positive pressure narcosis in one lung alone. These instruments might be of use in the operation of lobectomy or pneumonectomy. The laryngologist had been a pioneer in the study of lung disease by bronchoscopy, but he saw how these aids were now being employed by the physicians or surgeons themselves. Possibly the bronchoscopist, by helping to avoid pulmonary atelectasis in children, would be able to contribute to the prevention of established bronchiectasis.

Bronchoscopic Clinics

Mr. J. E. G. MCGIBBON and Dr. E. T. BAKER-BATES contributed a joint paper on the value of a bronchoscopic clinic. The necessity and difficulties of accurate diagnosis in certain cases of pulmonary disease, even after the most careful clinical examination and investigation, was stressed. The fact that the bronchoscope, which was originally employed forty years ago, was very little utilized owing to the special technique required; the need for team work; and the fact that it lay between the province of the laryngologist and chest physician, were also noted. If bronchoscopy was properly carried out under local anaesthesia it was a safe and harmless procedure even in the presence of serious lung disease. The work of and the methods employed at the bronchoscopic clinic of the Royal Southern Hospital, Liverpool, were then reviewed. The number of foreign body cases was small. Suspected bronchial neoplasm, pulmonary suppuration as in bronchiectasis and lung abscess, dyspnoea due to tracheal and bronchial obstruction, collapse of the lung, recurrent haemoptysis of obscure origin, and certain doubtful cases of asthma, all called for bronchoscopic inspection and appropriate treatment when possible, and formed the bulk of the work of the clinic. Foreign bodies were classified as radiologically opaque and radiologically non-opaque, and with regard to their composition as organic and inorganic. The clinical features of these types were described. The organic foreign bodies were dramatic and serious, and called for immediate removal. Several cases of non-opaque organic foreign bodies were encountered which had previously been thought to be lung abscess, unresolved pneumonia, and new growth. Bronchoscopy revealed an unsuspected foreign body, removal of which brought about resolution of the lung condition and cessation of symptoms in the majority of cases. The necessity for careful investigation whenever possible by direct and lipiodol *x*-ray examination was emphasized. A further point was that undue haste in attempts at unskilled removal proved as great a source of danger as the foreign body itself.

Pulmonary suppuration in the widest sense was next discussed: it was necessary to examine with the bronchoscope all cases of unresolved pneumonia, localized non-tuberculous pulmonary fibrosis, lung abscess, and bronchiectasis in order to exclude suppuration and pneumonitis distal to simple and malignant bronchial new growths and foreign bodies. The existence of true unresolved pneumonia and localized non-tuberculous pulmonary fibrosis was rare in their experience, and in most cases referred to the clinic with this diagnosis an aetiological factor such as a foreign body or new growth had been found. The diagnosis of unresolved pneumonia or localized pulmonary fibrosis should only be accepted with caution after a process of exclusion, especially in the adult. The results of broncho-

scopic aspiration and lavage in chronic lung abscess and bronchiectasis were in their experience disappointing and no better than that obtained by postural drainage when properly carried out.

Simple new growths were rare; all cases discovered during life had been revealed by bronchoscopy, and what had been thought to be an extremely rare condition might prove to have a much higher incidence when bronchoscopy was more generally employed in obscure lung lesions. The majority of these growths were curable by endoscopic methods, simple removal, diathermy, and radiation—if left untreated they ultimately gave rise to serious secondary effects. Angiomata and fibromata had been seen and treated successfully at the clinic. Malignant bronchial new growths were common; by bronchoscopy the diagnosis of these cases could be made beyond doubt. In cases with suppuration distal to a bronchial occlusion by growth dilatation with bougies of a carcinomatous stricture, removal of exuberant portions of growth by biting forceps, and the introduction of radon seeds or a radon tube in certain cases lead to re-aeration of the collapsed portion of lung and drainage of secretions. By such means the complicating suppurative lesion was usually relieved, the toxaemia lessened, and the sufferings of the patient minimized. Cure, of course, was impossible at this stage, and probably would remain so in view of the situation of the growth and its mode of spread into the lung parenchyma and mediastinum.

The early cases of bronchial carcinoma were next discussed—the clinical and radiological findings were negative, and the patients looked well. Recurrent haemoptysis was the presenting symptom. If any successful treatment were possible for this terrible condition its success would depend on early diagnosis, and for this bronchoscopy was essential. A case suitable for lobectomy had not yet been seen. In some cases the diagnosis of malignant disease had been disproved by bronchoscopy and foreign bodies removed. The value of the method of examination in obscure haemoptysis was illustrated. Except in cases of emergency bronchoscopic examination should always be preceded by complete clinical and radiological examination, including lipiodol bronchography. The cases should be followed up, so that the significance of unusual findings might be assessed, as it was not always possible to remove suitable fragments for pathological examination. Bronchoscopy would always mean team work, necessitating the closest liaison between laryngologist, physician, and radiologist in a well-equipped clinic, to which cases would be sent from a wide area. The paper was illustrated by radiographs, bronchoscopic reproductions, and a cinematograph film of the technique of the commoner bronchoscopic procedures.

General Discussion

In the discussion which followed Mr. H. V. FORSTER said that only on one occasion had he seen a peanut removed from a bronchus, and the patient died. He used to wonder why so many peanut inhalation accidents occurred in America until he was informed that peanut-eating gymnastics formed part of the expression of excitement of spectators at baseball matches. He agreed with Dr. Baker-Bates that an inhaled tooth was also a particularly undesirable type of foreign body. He would like to understand better the value of diathermy cautery as used in a bronchus when compared with the insertion of radon seeds in cases where the obstructing growth had not been proved to be malignant. Some cases after operations on the upper abdomen by the general surgeon used to develop ether pneumonia, at least in his early student days. The inhibition of diaphragmatic respiration had something to do with this. The laryngologist rarely saw such complications, in spite of the greater danger in his operations of inhalation of blood and secretions. He had not met a case of lung abscess after such operations in the practice of his teachers, and fortunately so far had been spared this complication in his own. Further, he had found the asthmatic patient stood ether narcosis wonderfully well, though he had seen an asthmatic paroxysm take place under nitrous oxide.

Mr. COURTENAY YORKE said that in his opinion the principal use of the bronchoscope would always be for the removal of foreign bodies, of which very many were not opaque to *x* rays and were quite unsuspected. He felt dubious as to the value of radon seeds in the treatment of bronchial carcinoma. The inaccessibility of the lower edge of the growth and the limitations of radon seeds, both in range and in duration of action, made him feel that on balance the possible temporary relief would hardly outweigh the risk and discomfort involved in their insertion. He referred to the fact that malignant disease in the larynx was a hundred times commoner in men than in women, and thought on that account an inquiry as to the relative sex incidence in bronchial carcinoma would be very interesting and might raise important questions in regard to aetiology. Dr. V. COTTON CORNWALL said that in investigating the cause of haemoptysis bronchoscopy was sometimes the only means by which a correct diagnosis could be made. He quoted a case at Fazakerley Sanatorium where all investigations, including bronchography, had been negative and bronchoscopy revealed a bronchial carcinoma.

STONE IN THE UPPER RENAL TRACT

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland on March 12, with the president, Mr. A. A. MCCONNELL, in the chair, Mr. J. SWIFT JOLY read a paper on the treatment of stone in the upper urinary tract.

Mr. Joly began by pointing out that no general rule could be laid down; each case must be judged separately, and the treatment be suited to the conditions found. He described four conditions: aseptic lithiasis; infected lithiasis; bilateral stone; and calculous anuria. In aseptic lithiasis the stone was usually small, round, and single, and commonly composed of calcium oxalate; it was found in a kidney the function of which was well preserved until impaction in the pelvis occurred, when the stone became triangular in shape and renal function was impaired. For the removal of this type of stone the most suitable operation was pyelotomy. The rarity of branched calculi in cases where the urine was sterile was mentioned: the only example of this had been a cystine calculus. The danger of attempting pyelotomy was stressed in cases where for various reasons proper access could not be gained to the pelvis. The treatment of ureteric calculi was discussed and valuable rules for their management laid down: wounds in the ureters and pelvis were always sutured in these cases. Infected lithiasis was more serious when of the coccal type rather than when due to *B. coli*, while a proteus infection was the worst; the reasons for this grading were given. With good function and mild infection removal of the stone was advisable. When the kidney was severely damaged and its fellow was uninfected Mr. Joly favoured nephrectomy, and indicated the importance of Hinman's law of "renal counterbalance." In cases of bilateral infection, in addition to removal of the stone, the value of temporary nephrostomy was emphasized. He again mentioned the value of Hinman's law in speaking of bilateral stone, and stressed the need for operating on the second side as soon as possible after the first operation. In calculous anuria he advised as a first step in all cases an attempt to pass a ureteric catheter. If this proved successful the cases could be thoroughly examined and a set operation be planned and performed under good conditions. If catheterization failed temporary nephrostomy should be performed on the side thought to be last obstructed.

Sir ARTHUR BALL said that the question of recurrence of stone had always been an anxious one, but he thought that this was only likely in infected kidneys. In one

case in which he had practised the incision advocated by Mr. Joly a very unpleasant secondary haemorrhage had occurred. Mr. T. J. D. LANE said that he was sceptical of a report of the presence of *Staphylococcus albus* when the urine was clear. Professor H. S. MEADE referred to cases of stone in the lower end of the ureter and to the advisability of removing the kidney in infected cases with very poor kidney function. He mentioned a case in which the whole kidney was a mass of calcareous deposit.

Mr. J. H. COOLICAN said that it was difficult to know how far to carry investigation in cases where a suspicion of renal stone arose, but in which there was not much clinical evidence. Mr. J. C. FLOOD doubted the justifiability of retrograde pyelography in the absence of infection in one kidney. It seemed to him that there was some doubt about the law of renal counterbalance. Dr. G. C. DOCKERAY referred to the occasional difficulty in deciding on operation. Mr. SETON PRINGLE thought it difficult to understand how a kidney could contain a stone as large as the one which Mr. Joly had shown and yet remain aseptic; when a stone had been present for any length of time he always considered it septic.

At the March meeting of the Society of Public Analysts and Other Analytical Chemists, with the president, Dr. G. Roche Lynch, in the chair, a paper on the properties of calciferol was contributed by Messrs. F. W. Anderson, A. L. Bacharach, and E. Lester Smith. In this the physico-chemical properties of seventy-three samples of calciferol, prepared under standardized conditions, were reviewed. It was suggested that the melting-point should be described as "unsharp 116° C." Nearly 80 per cent. of the figures for specific absorption in the ultra-violet region fell within the anticipated range based on experimental error, but the figures for optical rotation showed unexplained deviations outside the expected range. Nevertheless, all the samples fell well within the range laid down in the 1936 Addendum to the *British Pharmacopoeia*, 1932, and in the authors' opinion that range was unnecessarily wide.

M. Pepere (*Arch. ital. Chir.*, vol. 45, Fasc. 1, 1937, p. 57), as the result of experiments on rabbits, comes to the following conclusions. Apart from other morbid factors which may affect it the blood pressure during operations is directly dependent on the type of anaesthetic employed, the gravity of the operation, and the site where it is performed. Of the various types of anaesthesia the local regional type causes the least change in pressure, while all the others cause a fall of pressure which may or may not be preceded by a temporary hypertension. There is a considerable hypotension following splanchnic and spinal anaesthesia, which is less marked in the case of ether than of avertin. The operations which are chiefly responsible for hypotension are those conducted on the abdominal viscera, especially those situated in the neighbourhood of sensitive nerve centres. Laparotomy in itself, when the intestines are exposed to the air but are still contained in the abdominal cavity, does not cause any appreciable change in the blood pressure whatever anaesthesia is employed, whereas manipulation and evisceration of the intestines under local anaesthesia causes a sudden and considerable rise of pressure followed by more or less hypotension. Traction on the stomach, liver, and kidneys causes a rapid and considerable fall of pressure, which may last for a certain period after the stimulation has ceased. Operations on the thorax, and especially on the pleural cavity, cause a fall of pressure which may prove fatal. Trephining of the parietal bone under local anaesthesia causes an appreciable fall, but not a state of hypotension amounting to shock. Operations on the true pelvis cause only a very slight change, except when they are prolonged and necessitate traction on the intestines and mesentery.

Local News

ENGLAND AND WALES

Welsh Temple of Peace and Health

On April 8 Viscount Halifax, Lord Privy Seal, laid the foundation stone of the Welsh National Temple of Peace and Health in Cathays Park, Cardiff. The site was presented by the Cardiff City Council, and Lord Davies has given the munificent sum of £60,000 for the erection of the building. It will accommodate the administrative staff of the King Edward VII Welsh National Memorial Association, founded by Lord Davies for the prevention, treatment, and eradication of tuberculosis in Wales, and it will also serve as the headquarters of the Welsh Council of the League of Nations Union. In the course of his address Lord Halifax said that the new building would symbolize the dedication of thought to two great purposes—national health and international peace—and he dwelt on the important part occupied by public health in enabling the people of this country to discharge worthily the duties of citizenship. Lord Davies remarked that as Welshmen they might well feel proud that the first edifice specifically designed and built in this country and dedicated to the cause of international justice and peace would be erected on Welsh soil. After the ceremony a luncheon party was given by the Lord Mayor of Cardiff in the City Hall.

Extensions at Devonshire Hospital, Buxton

The Devonshire Royal Hospital, Buxton, the dome of which was said to be the largest unsupported span in existence, has decided upon a large programme of further development. This includes the extension of the thermal departments, with additional bathing accommodation and rest rooms, new wards for cases requiring prolonged treatment, more adequate reception and consulting rooms, and the modernization of the existing building. The cost is estimated at from £30,000 to £35,000, and an appeal is made on the ground of the great work—national, not local, in character—which the hospital has done during nearly eighty years, and—a point to which Lord Horder draws attention in a foreword to the brochure which has been issued—its value as a unit for treatment and research should the National Campaign against Rheumatism be successful. This hospital of 300 beds, the largest of its kind in the kingdom, treats some 4,000 patients annually, and the number of treatments—thermal, massage, and electrical—administered every year is close upon 100,000. It is intended for cases of rheumatism, subacute and chronic, gout, sciatica, and neuritis in all their forms, fibrositis, rheumatoid and osteo-arthritis, spondylitis, and crippling conditions arising from these diseases or from strains, fractures, and other causes, all of which are capable of being benefited by the Buxton waters. An annual report of the hospital for 1867 recently came into our hands. This was nine years after the hospital was built, or, rather, adapted to hospital use from a range of magnificent ducal stables. There it was stated that during its first nine years 9,574 patients had been under treatment, of whom 8,460 had been treated beneficially. Six-sevenths of the cases were of some form of rheumatism, the others being such as are ordinarily met with in hospitals. More than 8,000 cases of rheumatism, "embracing every single variety of this obstinate disease, were extensively relieved by the remedial agency of the Buxton mineral waters." The following interesting remark is added: "The great cost of the hospital is due to the unrestricted dietary of animal food and to the general excellence of the food that is provided; and the amount of benefit afforded must be partly referred to this circumstance, aiding by so much as this must do the valuable

medicinal effect of the air of the mountain limestone and the restorative and curative power of the nitrogenous and saline waters." The number of patients benefited since then has been multiplied twentyfold, and the opportunities before the hospital are greater than ever given the public support which it deserves.

Central Midwives Board

The Central Midwives Board for England and Wales has unanimously re-elected Sir Comyns Berkeley as its chairman for the year ending March 31, 1938. Mr. John Bright Banister, consulting obstetric surgeon to Queen Charlotte's Hospital and obstetric physician to Charing Cross Hospital, and Mr. Eardley Holland, obstetric and gynaecological surgeon to the London Hospital, have been appointed to fill vacancies in the membership of the Board. The remaining members, all of whom have been reappointed until March 31, 1938, are Councillor R. W. Brosch, Dr. J. J. Buchan, Miss K. V. B. Coni, Dr. W. Allen Daley, Miss A. Davies, Miss E. E. Greaves, Mr. A. B. Maclachlan, Miss A. A. I. Pollard, Lady Richmond, Miss K. J. Stephenson, and Mr. Arnold Walker.

Rheumatism Research in Leeds

The second annual report of the Leeds Advisory Committee on Research into Rheumatism contains a reference to a new appointment made by the Leeds Public Dispensary and Hospital, where members of the honorary staff have been actively working for some time on investigations. A full-time research post has been instituted there, and Dr. William Goldie who holds it has been granted by the University the status of research fellow. Dr. Douglas H. Collins, the research Fellow of the Advisory Committee, was sent by it to the United States for four months in 1936 to conduct an extended tour of the medical centres in that country, where the rheumatic diseases are being specially studied and treated. He has now been given charge of ten beds in the Harrogate Royal Bath Hospital in order to conduct detailed investigations into methods of treatment. In the present report Dr. Collins stresses the importance of basing the investigation of rheumatism and chronic arthritis on an indisputable pathological basis. He remarks that the development of this side of the work demands some new apparatus and further technical assistance for the specialized pathological examination of bones and joints. Papers on these and kindred topics have been read to medical societies during the period under review.

SCOTLAND

Discoverer of Ether Anaesthesia

A bronze memorial plaque to Crawford Williamson Long, the reputed discoverer of ether anaesthesia, was presented on March 30 to the Royal College of Surgeons of Edinburgh by the Southern Society of Clinical Surgeons, U.S.A. The presentation was made by the United States Consul in Edinburgh, and the plaque bears a bas-relief of Dr. Long, with the dates 1815–1878 and the inscription, "Discovered ether anaesthesia at Jefferson, Georgia, March 30, 1842." Mr. Henry Wade, President of the Royal College of Surgeons, who received the plaque, said that the Southern Society of Clinical Surgeons visited Edinburgh last June, under the leadership of Dr. William Perrin Nicolson of Atlanta, and had decided to present this memorial to the city of Edinburgh, where James Young Simpson had discovered the anaesthetic properties of chloroform. Mr. L. B. Wevill explained that Long, at the age of 26, after he had been in practice for only a year, first used ether with the deliberate intention of abolishing pain during a surgical operation. If this had been done in some world-famous clinic it would have commanded respect and admiration, but it was the achievement of an unknown young general practitioner working in a small town over a hundred miles from the nearest railroad. It had demanded great courage on the part of both Dr. Long and his patient, Mr. Venable. Dr. Long, after working as a student in Georgia and Kentucky, had gone to Pennsylvania University, then the premier school of medicine in America, and later worked in New York hospitals. Finally he settled down as a country practitioner in Jefferson, and one day he took part in a discussion about the itinerant chemists who amused gatherings by getting someone to inhale nitrous oxide or ether, and entertain the crowd with their antics. Long's friends offered to let him try it on them, and Mr. Venable, who had often inhaled ether, requested Dr. Long to remove a wen after the inhalation of ether so that this might be done painlessly. The operation was completely successful, but it was some years before the use of ether as an anaesthetic spread.

Honorary Medical Graduates

At the spring graduation ceremony of Aberdeen University on March 31, Principal W. Hamilton Fyfe presiding, the degree of LL.D. was conferred among others upon Naughton Dunn, M.A., M.B., Ch.B., lecturer on orthopaedic surgery in the University of Birmingham. The Dean of the Faculty of Law, in submitting his name, said that Mr. Dunn was a graduate of Aberdeen University who had made an international name in the sphere of orthopaedic surgery, and who had shown a steady devotion to the cause of the cripple. As assistant to the late Sir Robert Jones he had been intimately connected with his original scheme for orthopaedic treatment, and had given unsparingly of his time, energy, and skill to many hospitals concerned with this admirable purpose.

The University of Glasgow has announced that at its commemmoration on June 16 it will confer honorary LL.D. degrees upon the following members of the medical profession: Jan Boeke, Professor of Histology and Embryology, University of Utrecht; John Marshall Cowan, physician in Glasgow; the Right Hon. Walter Elliot, Secretary of State for Scotland; Thomas Kirkpatrick Monro, Emeritus Professor of Medicine, University of Glasgow; Sir Robert Muir, Emeritus Professor of Pathology, University of Glasgow; and Ralph Stockman, Emeritus Professor of Materia Medica, University of Glasgow.

Services of Glasgow Samaritan Hospital to be Extended

At the annual meeting of the Royal Samaritan Hospital for Women, Glasgow, Lord Rowallan, who presided, submitted a draft of a provisional order to enlarge the objects of the hospital. He said he believed the time had come to extend the usefulness of this hospital beyond the purely gynaecological services it rendered and to provide maternity services. Under existing legislation they could not extend the institution in that direction, but they contemplated doing so in the immediate future. Professor James Henry said that there was an increasing tendency for women to seek the advantages of a hospital for their confinement. In Vienna, Budapest, and Stockholm 80 per cent. of confinements took place in hospital; in Scotland the percentage was about 30, and ten years ago it was 11. In the London County Council area 60 per cent. of confinements took place in hospitals, and the death rate was the lowest in England and Wales.

Birth Control Conference in Edinburgh

The National Birth Control Association, of which Lord Horder is president, has arranged a medical conference to be held on Friday, April 30, in the hall of the British Medical Association, 7, Drumsheugh Gardens, Edinburgh. At the afternoon session (3 to 6 p.m.), with Dr. Douglas Miller in the chair, Dr. Helena Wright will introduce a discussion on the "Technique of Contraception," and after this the birth control clinic at 90, East Crosscauseway, will be open for inspection. The evening session

(8 to 10 p.m.), with Professor F. A. E. Crew in the chair, will be devoted to a discussion on "Recent Advances in the Scientific Study of Chemical Contraception," introduced by Dr. J. R. Baker. During the afternoon and evening the museum of contraceptives, under the direction of Professor P. S. Lelean, in the Usher Institute of Public Health, Warrender Park Road, will be open for inspection. Application for tickets (price 2s. for the whole conference) should be made beforehand (enclosing a postal order) to the Headquarters' Organizer, N.B.C.A. (26, Eccleston Street, London, S.W.1). The conference is open to doctors and a few lay workers from birth control clinics.

Leith Hospital

At the annual meeting of contributors to Leith Hospital it was announced that £50,000 had been received towards the hospital extension fund, which aimed at collecting £60,000. The number of patients treated in the wards had been 1,897, with 18,276 out-patients. The ordinary income for the year had been £17,809, with an ordinary expenditure of £20,182, but the deficit had been amply covered by an extraordinary income of £11,512, with extraordinary expenditure of £1,120. Mr. Pirie Watson said that the extension would cover in the first place a new nurses' home, and after this had been completed the medical side of the hospital would be rebuilt and would then be the most modern building of its kind in the city.

FRANCE

[FROM OUR CORRESPONDENT IN PARIS]

The Soi-Disant Benevolent Dispensary

At the last general meeting of the Confédération des Syndicats Médicaux de France there was an informative discussion about a certain type of dispensary which combines benevolence with business in that happy spirit of compromise that makes the best of both worlds. Such a dispensary, on the one hand, appeals to the charity of street collections, the sale of badges, etc., and, on the other hand, charges the patients more or less substantial fees for services rendered; at the same time its benevolent side is shown to the tax collector, who is expected to let such a good work enjoy fiscal immunity. It is obvious that in the competition for patients such an institution is given a running start in relation to the frankly commercial enterprise or the bona-fide dispensary serving the poor for little or no material recompense. It was decided by the Confédération that as from March 1, 1937, it would collaborate with the dispensaries giving free treatment exclusively to the poor, and it would "black list" this morally amphibious type of institution. The local branches of the Confédération will be expected to invite those of their members who are attached to these questionable dispensaries to send in their resignations, failing which such doctors will be invited to appear before a body of their colleagues to explain their conduct, and if their explanations are unsatisfactory to submit to exclusion from the Confédération.

Tuberculosis as Seen by the General Practitioner

Reference has been made more than once in these columns to the enterprise of Dr. Godlewski, the father of the Assises de l'Assemblée Française de Médecine Générale, an organization for the pooling and sifting of the experiences of general practitioners throughout France. The twenty-fourth meeting of this body, presided over by Professor Bezançon, was devoted to tuberculosis in general and tuberculin skin tests in particular. The contributions of certain speakers on this subject brought out in clear contrast the behaviour of Parisians and country dwellers at the present time. Among well-to-do Parisian children not more than 12 per cent. up to the age of 15 are tuberculin-positive, and in the country some 75 per cent. of young adults are tuberculin-negative. At the other extreme there are the medical students who, even at the beginning of their career, are tuberculin-positive eighty-eight times out of a hundred. Several speakers dealt with the danger to school children of teachers suffering from progressive tuberculosis and refusing to give up work. In this connexion a resolution was adopted recommending the employment of the tuberculin skin test in schools at least once a year among the tuberculin-negative children. This task should be undertaken by the family doctor, or failing him by the school medical officer. A certificate dealing with the findings of this test should be issued for each child at the beginning of each scholastic year.

Leprosy Contracted in Paris

What was described at the time as disquieting by Professor Marchoux of the Pasteur Institute was the communication made to the French Academy of Medicine on March 16 by Drs. C. Flandin and J. Ragu on the origin, mode of contagion, and incubation period in ninety-five cases of leprosy, six of which had been contracted in the Paris area. It has hitherto been taught that leprosy has long ceased to be contracted in Paris, and in this connexion two alternatives may be raised: Was this notion mistaken, or has leprosy again become transmissible in Paris? Drs. Flandin and Ragu incline to the latter alternative as being the more plausible. Of the six cases of leprosy contracted in Paris four represented sexual infections, and so far there is nothing very strange in the development of leprosy in a bed-fellow, but in the remaining two cases the patients had merely lived at one time in a leprous environment, one of the patients being a 26-year-old school teacher who since birth had lived in a veritable Chinese colony in the neighbourhood of Paris. It remains to be seen what will befall her class of sixty girls, from whom she has but lately taken a prolonged leave of absence. When Dr. Flandin was appointed at the end of 1934 to the leper service of the St. Louis Hospital there were only four lepers in it. He traces the remarkable rise from four to ninety-five cases to: (1) the consideration he has shown the lepers fearful of being exhibited as curious beasts to medical students; (2) strict respect of professional secrecy and of the liberty of the individual; and (3) the success of intravenous injections of chaulmoogra-cholesterol. It seems that the lepers of Paris have established an informal freemasonry among themselves, passing on to each other by unsuspected channels of communication information about therapeutic advances. It might have been supposed that most of the ninety-five patients belonged to the coloured races or were half-castes, but in fact only twenty-two of them belonged to the former category and only nine to the latter. The majority of the patients were, in other words, whites who had been born in the colonies or had at least spent some time there.

Proposed Abolition of State Regulation of Prostitution

The proposal of M. Henri Sellier, Minister of Public Health, shortly to introduce a Bill to abolish the State regulation of prostitution is receiving the support of the International Abolitionist Federation. It intends to organize an international congress in Paris from May 20 to May 22—that is, at the moment when important decisions will be taken in France in this matter. The congress will study the problems of prostitution and venereal disease from the legal, medical, and moral points of view, and the value of abolitionist principles will be put before the French public in the light of their application in Great Britain, Holland, and the Scandinavian countries. Professor Paul Gemähling of the Strasbourg University and president of the French branch of the Federation will open the discussion. Dr. Veldhuyzen, director of the Wilhelmine Hospital in Amsterdam, will open the discussion on the medical aspect of prostitution. Further information about the congress may be obtained from the Secretariat of the Federation, 8, Rue de l'Hôtel-de-Ville, Geneva.

Correspondence

The Factories Bill

SIR,—The Factories Bill, at present passing through its committee stage in the House of Commons, is obviously one of the most important Bills of the session. Its provisions affect directly more than 7,000,000 people. The present Bill purports to be a consolidating measure incorporating and superseding a round dozen of previous Acts, the earliest dating from 1894. The last Act dealing specifically with factories and workshops was passed in 1901—that is, more than a generation ago. The present Bill, therefore, will in all probability legislate for and consequently stabilize conditions for a whole generation to come. Obviously it is of essential importance that its medical provisions be brought into line as soon as possible with medical science of the present day.

Part 1 (Health, General Provisions), Part 3 (Welfare, General Provisions), Part 4 (Health, Safety, and Welfare, Special Provisions and Regulations), and Part 5 (Notification and Investigation of Accidents and Industrial Diseases) deal, as their short titles indicate, principally, and indeed almost exclusively, with medical questions. Part 6 (Employment of Women and Young Persons), including as it does questions of fitness, hours of employment and rest, hygienic regulations, etc., again is concerned with predominantly medical problems. The committee specially appointed to consider the Bill numbers seventy persons, and it bristles with lawyers, but I myself am the only medical man sitting upon this committee—Major Neven Spence, who was appointed a member, having been obliged to absent himself from its meetings owing to his election to another committee which meets at the same hour.

I have received from many important bodies, such as the Royal Sanitary Institute, the Society of Medical Officers of Health, the National Union of Teachers, the London Teachers' Association, and the Industrial Welfare Society innumerable and well-considered suggestions for altering the provisions of the Bill, and as I have had a long personal experience of industrial diseases of the skin so often causing absence from work in factories, I have certain modifications of my own which I should like to press. As a result I have had to put down such a number of amendments as seems inordinate for any single member to move, and partly, no doubt, owing to this unfortunate position amendments which I have tabled are often not called. The ignorance of medical questions and consequent apathy towards them of the average lay Member of Parliament makes it difficult for me to get support for what so many members regard as mere medical fads. The conservatism of the typical Parliamentary draughtsman, springing from *vis inertiae* rather than from conviction, again brings difficulties and impedes modifications, although these are necessitated by changed conditions and are supported by authentic medical opinion.

May I cite as an illustration Clause 64, which declares five diseases to be notifiable. Three of these diseases have, for practical purposes, disappeared as industrial diseases. When I pointed this out I was informed by the Home Office that the reason for their inclusion was that "as a matter of convenience we are in Clause 64 simply re-enacting Section 73 of the Act of 1901 in which those five diseases are mentioned." In the thirty-six years which have intervened since the Act of 1901 other diseases have become much more important, notably, for example, cancer of the skin; but no attempt to deal with these is made in the Bill beyond a sort of blunderbuss clause (No. 151), that Orders made by the Secretary of State since 1901 remain in force, and the certifying factory surgeon is saddled with the task of finding out what these Orders are. Surely it would be more sensible to cancel the regulation requiring notification of diseases which since 1901 have become practically obsolete and to schedule in the Bill all the diseases which would be notifiable under the forthcoming Act.

The moral to be drawn from this letter, I submit, is that there are too few medical Members of Parliament, and it is therefore all the more deplorable that Oxford and the Combined English Universities should have missed their opportunity of returning such distinguished members of the profession as Sir Farquhar Buzzard and Sir Henry Brackenbury.—I am, etc.,

House of Commons, April 19. E. GRAHAM-LITTLE.

The Tavistock Clinic

SIR,—The Council of the Institute of Medical Psychology have decided, after much deliberation, to change its title and revert to the original name of "The Tavistock Clinic." I should like through your columns to notify the profession of this fact so that no confusion may arise in their minds.

The Tavistock Clinic was the original name adopted when in 1920 the work of providing psychological treatment was begun in a house in Tavistock Square. As the clinic grew, its name became well known among the profession at home and also on the Continent and in the United States. A good many people seem hardly to have realized that it was changed some four or five years ago, and to them there will seem nothing unusual in our new title.

The change has seemed advisable largely because of the constant confusion which arose as a result of the non-medical institutes of psychology and psychotherapy which have arisen during the past few years. Some of these have gone so far as to copy our literature and our stationery, evidently feeling that this was likely to be of value to them. Any hospital is reluctant to change its name, because there is inevitably some loss of goodwill, particularly among those who support or might support the work. I am confident, however, that we can rely upon our many friends in the profession to see that such loss does not occur, and that whatever good reputation the Institute of Medical Psychology had shall be carried over to the Tavistock Clinic, which certainly needs all the help that they can give it.—I am, etc.,

HENRY B. BRACKENBURY,
Chairman of the Council.

The Tavistock Clinic, Malet Place,
W.C.1, April 12.

The General Practitioner and Urinary Infections

SIR,—The frequency with which the common complaint of pain, frequency of micturition, and "scalding" is met and the hit-or-miss methods often adopted in its treatment lead me to think that the following may be of interest to my fellow general practitioners.

In all humility I describe a method of control that I have evolved in the midst of general practice which enables one to state with some certainty whether the condition is or is not yielding to treatment. Not for one instant do I suggest that the general practitioner should attempt to usurp the functions of the properly equipped and expertly superintended pathological laboratory in this

connexion; neither does the method aim at any definite classification of the infecting organism. There are, however, many cases with which the practitioner himself has to deal, and which, for one reason or another, it is not practicable to refer to the specialist.

I used to treat my cases of pyelitis and cystitis—after excluding gross pathological lesions to the best of my ability—with heavy doses of potassium citrate and five or ten minims of tincture of hyoscyamus in an infusion of buchu, until the more unpleasant symptoms had subsided. If all went well I was fairly satisfied. If the symptoms persisted I followed the best textbook traditions and tried the effect of a sudden switch to an acidified urine and doses of hexamine in the hope of formaldehyde being liberated in the acid medium with antiseptic results. I administered the acid sodium phosphate mixture before meals and the hexamine after meals in the belief that the formaldehyde must not be liberated from the hexamine until the urinary tract had been reached if any inhibitive effect was to be exerted on the growth of the organisms.

Whether individual cases improved or not I always had the feeling that I was working in the dark. This led me to try to obtain assistance from my microscope. First attempts were with films made from a drop taken from the bottom of a urine vase after a few hours' standing. Except in cases of gross infection the resulting slides were disappointing and showed little connexion with the clinical severity of the case.

The centrifuge seemed out of place in my surgery, and after experiment I evolved the following method.

Six to eight ounces of the urine—a catheter specimen in the case of women and a mid-stream specimen in the case of men—are placed in a folded 12-inch filter paper in a large glass filter which has been previously sterilized and allowed to stand covered by a second unfolded filter paper to exclude dust. The time taken for the urine to pass through the paper gives a useful indication of the amount of mucin present: phosphates and urates do not seem to hold up filtration to any great extent. The clear filtrate may be used to test for the presence of albumin. When only half an inch or so remains it is poured off and a film is made on a clean slide of the material removed from the sides of the filter paper near its apex with a sterilized platinum loop. The slide should be dried as rapidly as possible by waving it in the air and then stained by Leishman's method. In an acute infection with coliform bacilli a 1/6 objective is all that is required to show vast numbers of the bacilli, epithelial cells with their large irregular outline and small nuclei, red blood cells if present, and possibly renal casts. Urinary crystals may be seen, but their presence in a film should not be taken as conclusive evidence of their presence in the bladder or urinary tract, since they (particularly oxalates) crystallize out so rapidly in standing and cooling urines and may be absent at body temperature. Later pus cells may become increasingly numerous.

Examination by this rapid method every five or six days gives one a very satisfactory indication of the success or failure of one's treatment quite independently of the patient's own description of his or her suffering. The latter is a most unreliable index, since I have often found traces of a heavy residual infection in the urine of patients who have reported a complete cessation of unpleasant symptoms.

For the past year or more I have been using mandelic acid in the form of its sodium or ammonium salts together with ammonium chloride or acid sodium phosphate as an acidifying agent. Where the reaction has been kept at a *p*H of 5.3 or lower—not always an easy matter—and in the absence of a persistent cause of infection such as a calculus or diseased kidney, the results as shown by my periodical slides and the subsidence of the patient's symptoms have been most satisfactory.

The importance of maintaining the acid reaction of the urine in treatment with mandelates is, I think, generally accepted, and a simple control that may be used by the patient is furnished by the B.D.H. Universal Indicator, which gives the approximate *p*H from 3 to 11 corresponding to a variation of colours formed by the addition of a few drops of the indicator to half an inch of urine in a test-tube.

Slides examined without cedar-wood oil will remain clear for several weeks, and there is a fascination in watching a labelled series of films changing from a mass of organisms and cells to an almost clear slide that amply repays the slight extra trouble involved. When circumstances permit I send a specimen of the urine to a pathologist for culture as soon as I am getting fairly clear slides. The report that no pathogenic organisms have been grown on incubation is a most satisfactory termination to the case.—I am, etc.,

Rookwood, Reading, March 26. E. E. S. WHEATLEY.

Angina Innocens

SIR,—Dr. Geoffrey Bourne's article on angina innocens (*Journal*, April 3, p. 695) and Dr. A. G. Auld's letter (April 10, p. 784) will be of interest to every practitioner. A patient of mine had what I thought until last week was pseudo-angina, or using Dr. Bourne's new terminology angina innocens. He was 37 when he first consulted me eleven years ago. The pain was precordial, radiated to the left arm, and lasted a few minutes. Its relation to exercise was incidental, sometimes it came on when he was walking, or playing golf; but it would come on also when he was lying in bed or sitting down quietly in a chair. Its severity varied; it might be a dull ache or an acute gripping pain. Its frequency varied also, sometimes there were four or five attacks in twenty-four hours, sometimes a few days were free from pain altogether. There was no evidence whatsoever of cardiovascular disease, by physical examination, radiograph, or electrocardiogram; his blood pressure was normal, his Wassermann reaction negative, and the pulse rate usually between 80 and 90. He was seen several times by consultants, who agreed that his was a case of pseudo-angina. He was a nervous subject, and amyl nitrite did not relieve the attacks.

He, like Dr. Auld's patient, fulfils all of Dr. Geoffrey Bourne's criteria for angina innocens, except that the course of the disease proved that it was not innocent. A week ago, after having expressed the opinion earlier in the day that he had not felt so well for years, and while sitting down quietly, playing cards, he died.—I am, etc.,

Skewen, Glamorganshire, April 10. TREVOR DAVIES.

Auditory Nerve Section

SIR,—In the *Journal* of March 27 (p. 660) Mr. R. Rutherford, in his paper on operative section of the auditory nerve, suggests that with the use of a suitably designed endoscope operative trauma might be reduced to a minimum. With the use of precise mathematical measurement it is shown to be possible to identify the internal auditory meatus with considerable precision, and to expose the auditory nerve by the insertion of a graduated retractor to a calculated depth. Mr. Rutherford goes no further than to show that the exposure of the nerve is practicable by his method, but should the sug-

gested advantage of reduced tissue trauma be regarded as a recommendation for Mr. Rutherford's procedure in preference to the open operation of Dandy, Cairns, and MacKenzie, some comparison should be made between the principles and technique of the two operations.

The extent of the operative exposure which Mr. Rutherford has employed for the insertion of the graduated retractor—namely, an opening in the skull two inches by one and a half inches—is no smaller than that employed by neurological surgeons at the open operation. If the cisterna magna had been evacuated, and had inhalation narcosis been avoided, intracranial tension would have been reduced to such an extent that the auditory nerve could have been easily exposed through the approach employed. The passage of a retractor down to the auditory nerve, if not carried out under direct vision, would endanger the veins passing from the cerebellar cortex to the sigmoid and inferior petrosal sinuses.

The use of an endoscope, with the necessity for dividing the nerve with a hook-knife, would carry the additional risk of injury to the anterior inferior cerebellar artery. The relations of this vessel to the auditory nerve are variable; it commonly lies between the facial and auditory nerves, or between the cochlear and vestibular parts of the latter; it may form a loop in front of the auditory nerve, in which situation it is especially exposed to injury. Haemorrhage from a vessel of such size would be disastrous, for it could never be controlled through the narrow orifice of an endoscope. In the open operation the nerve can be perfectly exposed after the surrounding arachnoid has been incised, and adjacent blood vessels can be either avoided or electrically coagulated. By transfixing the auditory nerve with a small right-angled hook it can be drawn away from the facial nerve and any intervening blood vessels, and the section can be limited to its vestibular portion. The latter procedure is of special value when some hearing still remains, but it requires for its successful performance a standard of precision which could never be attained without the perfect exposure which only the open operation can afford.

The suggested method of the identification of the auditory nerve by its action currents would appear to be an admission, not only of the inadequacy of the exposure as judged by the standards of the open operation, but also of the limitations of the accuracy of the original premises.—I am, etc.,

A. R. D. PATTISON, F.R.C.S.

Newcastle-upon-Tyne, March 30.

Medicinal Kaolin in Food Poisoning

SIR,—Dr. N. Mutch, in his article on medicinal kaolin in food poisoning in the *Journal* of March 20 (p. 595), compares a number of commercial specimens of medicinal kaolin in respect of grittiness and sedimentation. He then selects one of these specimens and carries out a number of tests of its adsorptive capacity. From these results he draws certain conclusions as to the value of different methods of testing which do not appear to be entirely warranted by the facts.

It is well known that kaolin peptizes more readily in a neutral or slightly alkaline medium than in a slightly acid medium, whereas its adsorptive power is greatest in an acid medium. Since it must be assumed that slight differences in reaction are neutralized in the body it follows that sedimentation tests carried out *in vitro* at different *p*H values are of little use as indications of what will happen in the body. Actually the difference in reaction between the two kaolins Nos. 4 and 5 tested by Dr. Mutch is quite sufficient to explain the slight differences in the rates of sedimentation.

The methylene-blue test has been widely used as a means of comparing the adsorptive powers of different specimens of kaolin. It has the advantage of being simply carried out and giving results which can be expressed as numerical values. (Incidentally on physico-chemical grounds the rational method of carrying out the test is to use an excess of methylene-blue and to calculate the amount adsorbed after a definite time. The *p*H should also be adjusted to a standard value.) Dr. Mutch condemns the methylene-blue test not on the ground that it gives anomalous results with different specimens of kaolin, but because the particular sample of kaolin which he examined in its adsorptive power for different dyes showed qualitative differences from magnesium trisilicate. Is there really any more ground for the selection of an arbitrary food poison as the test medium than an arbitrary dye? Dr. Mutch does not suggest which of the food poisons is the most suitable for testing kaolin, nor does he give any comparative values for the adsorptive powers of different commercial kaolins, either for food poisons or dyestuffs. It seems possible that the anomalies might be just as great in the one case as in the other. In any event the comparatively simple conditions of testing *in vitro* must be vastly different from the complex environment occurring in the body.—I am, etc.,

London, E.2, April 5. NORMAN EVERS, B.Sc., F.I.C.

Intranasal Ionization by Electrotherapists

SIR,—It has recently come to my knowledge that certain masseurs and electrotherapists not medical men are claiming to perform intranasal ionization for hay fever and allied conditions, and are circularizing medical men for their support. While this may be done in all good faith, I think it only fair to both patients and doctors to point out that this treatment can be efficiently carried out only by those who, through practice, have familiarized themselves with the anatomy of the nose. If this form of treatment is to be successful attention to details of technique is essential. The nose is first sprayed with a 2 per cent. solution of cocaine hydrochloride to allow for shrinkage and anaesthesia to take place; it is then carefully packed, by reflected light, with ribbon gauze soaked in zinc sulphate solution. It is imperative that the gauze be in contact with every part of the nasal mucosa. It would be a pity if this form of treatment for hay fever and spasmodic rhinitis should fall into disrepute owing to its being attempted by persons unqualified to carry it out.—I am, etc.,

Bournemouth, April 5. ROY SALKELD.

Blood Sugar Worship

SIR,—Dr. Leyton (*Journal*, April 10, p. 782) states that I am mistaken in believing that hyperglycaemia without glycosuria or ketosis is as little likely to cause complications as a "normal" blood sugar in a diabetic. I should like to know on what grounds he bases this statement, and whether he considers that hyperglycaemia alone produces the complications?—I am, etc.,

London, S.W.1, April 11. OLIVER WALKER.

Reaction Time of Motorists

SIR,—I have not heard, nor read, of it being suggested that the "reaction time" test, as applied to those wishing to be aviators, could be used in the case of the motorist whose "fitness to be in charge" is under question. I think we are all agreed that "slowness of reaction" is the chief cause of a motorist being a danger to himself and to other road users. Could some authority on the use

of such a test say if its employment would be practical, clinically and financially?

We accept 60 to 80 as a normal pulse rate; by investigating a large number of motorists (say a thousand), a wide normal reaction time could be gauged. The test would be applied at the time of the primary examination at the police station, and the next day the results of a second test would be compared. Those who have been cross-examined know too well what a boon it would be to have a test that was as near certain as possible.—I am, etc.,

Hampton, Middlesex, April 9. G. C. L. WOODROFFE.

Alcohol and Motoring Accidents

SIR,—In view of the recent mock trial (*Journal*, January 23, p. 128) the following case may be of interest.

A motorist had a fairly severe accident with head and left hip injuries, and on recovery was warned that alcohol would act with more than usual strength, but he was allowed a little cider. Six months later I was called to see him at a police station at 8 a.m., and heard the following story: he had had an evening with friends and had taken a few glasses of cider. Later he had gone to a night club, where he had ordered non-alcoholic beer. He took a friend's glass of wine as a mild practical joke. Driving home to a distant suburb at about 2 a.m. he felt extremely drowsy, and as he thought himself a danger on the road he turned into a quiet side road and slept peacefully till 7 a.m.

He awoke stiff and in not too good form, backed his car to turn out, and sent his rear well and truly into a lamp-post. On getting out to see the damage he was seen by a passing constable, who said that he was unsteady and "drunk in charge"; at the police station I was informed that the police surgeon had already certified to that effect before I was called. At 8.45 a.m. the patient was somewhat irascible, his tongue was furred, his eyes were very bloodshot, tendon reflexes were exaggerated, ocular convergence was slightly defective, and the pupil reactions were normal. Writing and diction were normal; walking was not quite perfect, but this might have been accounted for by his hip injury.

I was prepared to say that at the time I saw him he was quite capable of driving, but if pressed I should have had to admit that I thought him to have taken during the evening and night considerably more alcohol than he admitted; and I should not have been very strong if asked my opinion of his probable condition one and three-quarter hours before I saw him. However, if his story was correct he had had very little alcohol, and all of that at least six to nine hours before the incident. In other words an estimation of the blood-alcohol ought to have demonstrated his truthfulness, or otherwise. The figure obtained was 0.003 per cent., and his solicitor, who had even considered the wisdom of pleading guilty, was able on that evidence to have the case dismissed.

—I am, etc.,

F. HARWOOD STEVENSON, M.D., M.R.C.P.

Edgware, Middlesex, April 8.

Local Anaesthesia for Perineal Tears

SIR,—I was interested in Dr. Stanley Way's communication on local anaesthesia in the repair of the torn perineum (*Journal*, April 10, p. 753), and I agree that general anaesthesia is often undesirable and unjustifiable. I do not think, however, that infiltration of all the tissues is the method of choice in producing analgesia, as "soddening" in a potentially infective area is certainly not desirable.

I have found that all that is needed in the way of anaesthesia is the raising of a wheal by the intradermal injection of 1 per cent. novocain at the site of the proposed suture, on either side of the tear. When no local anaesthetic is used very little pain is experienced on introducing the needle, but in its exit through the skin of the opposite side there is a great deal of pain. A series of two or three wheals may be raised by a single cutaneous puncture, and this minor operation may be conveniently carried out with the patient in the left lateral position.

I always use silk-worm gut sutures in preference to absorbable sutures, as with the latter there is a greater local reaction during the process of absorption, which thereby increases the liability to infection.—I am, etc.,

TREVOR HUGHES, L.R.C.P., L.R.C.S., L.R.F.P.S.

Ruthin, April 12.

SIR,—I read with interest Dr. Stanley Way's article on the use of local anaesthesia in the repair of a torn perineum. As a general practitioner I have been using local anaesthesia for some time in repairs, and have never had a case break down or go septic, and this method, rather than general anaesthesia, has been much preferred by my patients. I have lowered the number of tears in my own cases by doing a routine episiotomy under local anaesthesia. I use as a rule 2 per cent. novutox in a 2 c.cm. syringe, and just prior to crowning and while the pains are at a maximum infiltrate the labia at the usual site on both sides with 1 c.cm. of local anaesthetic; the incisions and subsequent suturing can then be done painlessly.—I am, etc.,

East Bergholt, Suffolk, April 12. J. R. B. MCBRIDE.

Erysipelas Treated by Prontosil

SIR,—The importance and interest of the prontosil treatment of streptococcal infections leads me to follow the example of my friend and neighbour, Dr. W. H. Palmer (*Journal*, February 27, p. 472), by putting on record my experience of prontosil in three cases of facial erysipelas which I have dealt with in the past three weeks.

The first case was in a woman of 60. When first seen the right external ear and adjacent part of the face showed typical erysipelas of moderate severity, with great pain, and the usual constitutional disturbance.

Prontosil album, the oral preparation, two tablets thrice daily, was prescribed. Within twenty-four hours the condition was checked, and progressive improvement followed.

The second case, in a woman of 30, was of a very severe type. Both eyes were closed, there was intense conjunctivitis, a rapid march of the line of induration, severe pain, and prostration, with a temperature of 103.5° F. This case was admitted to hospital, and had one injection of prontosil, in addition to the two tablets of prontosil album thrice daily. Four short-wave treatments of five minutes' duration were also given. In a matter of hours the spread was checked and the pain greatly relieved. Within forty-eight hours the temperature fell to normal, and there was no further rise.

The third case was in an old woman of 79, bed-ridden all winter, with severe bronchial catarrh and cardiac debility. The onset of severe facial erysipelas, involving in a few hours the whole face, appeared to be a terminal complication. She had a temperature of 103° F., dyspnoea and cyanosis, severe pain and distress. However, I put her on prontosil album, two tablets thrice daily, and by the following day she felt better. Another day showed obvious improvement, and by the third day she was out of danger.

—I am, etc.,

Camborne, April 7. R. H. BLAIR.

The Birching of Children

SIR,—Dr. P. G. Bentlif, in discussing the punishment of children (*Journal*, April 10, p. 785), seems, like many writers on this subject, to be inconsistent. In his third paragraph he says: "A mischievous spirit is part of every healthy boy's character, and if punishment is given,

painful though it may be, he accepts it as part of the game. . . ." In his fourth paragraph he says: "The increase of juvenile crime during the last ten years has been a difficult problem to tackle, but I am of the firm opinion that corporal punishment, carried out humanely and with every consideration for the particular case in point, is a far better method of controlling crime than a lot of indiscriminate dabbling with a science about which so few of us know so very little."

Thus in one paragraph Dr. Bentlif approves and applauds the mischievous spirit that results in juvenile crime, and in the next he is advocating a means of controlling, or at least partially suppressing, the manifestations of that spirit. He apparently regards the administration of justice as a game, not as a means of preventing crime and curing or deterring criminals.—I am, etc.,

J. E. J. PALSER, M.R.C.S., L.R.C.P.

London, N.10, April 9.

SIR,—Dr. Bentlif's letter on the birching of children is inspired by his personal experience in seeing this punishment carried out, but I believe it is a fact that there is considerable variation in the severity or otherwise with which the flogging is administered, and it would appear that in Jersey justice is tempered with mercy! It is not always so, however, and I could quote instances in which the victim does not appear to have got off as lightly as the cases mentioned by Dr. Bentlif.

However, I am not so concerned with the physical side as with the psychological, and here Dr. Bentlif will find his opinions in opposition to those of the vast majority of those well qualified to judge. Thus, Sir Walter Langdon-Brown, writing in the *Daily Telegraph*, says, "Medical psychologists are unanimous in their disapproval of a barbarous practice which does even more harm to the mind than to the body, and has a diametrically opposite effect to that presumably intended." I could quote many such opinions. Dr. Bentlif's view that juvenile crime can be controlled by the infliction of corporal punishment is completely at variance with the facts. Some time ago the Board of Education published an investigation showing that no less than 80.34 per cent. of boys who had undergone a judicial birching had been recharged within two years. Mr. Justice du Parcq, speaking from the Bench on December 5, 1933, said, "In my life's experience I have always noticed that a judicial child-flogging is the first sentence in tragedy of a life of crime." At Ealing Juvenile Court last month three boys who had been birched only a fortnight before on a charge of theft, again appeared, charged with a similar offence. Dr. Norris, chief inspector of the Children's Branch of the Home Office, gave his opinion that "police court birching is not effective, and I would like to see it abolished."

Dr. Bentlif seems to think it is the business of the law to *punish*, but it is not, except when it acts as a deterrent from further anti-social behaviour, and all the facts show that the birching of juveniles completely fails in that respect. A thrashing administered by parent or teacher in the familiar surroundings of home or school is one thing, but one carried out under the circumstances portrayed in the leading article in the *Journal* (March 20, p. 618), which led to my first letter, is quite another. However little respect Dr. Bentlif may have for the science of psychology, I still maintain, and so do those far better qualified to speak than I, that such punishments are as harmful as they are demonstrably ineffective.—I am, etc.,

Hove, Sussex, April 11. W. N. MAPLE.

Inhalational Therapy

SIR,—As one of the three trustees for the Duke-Fingard inhalational treatment I feel compelled to say a few words in answer to your correspondent's letter published on March 13 (p. 587).

I have been conversant with this particular form of therapy for the past two years, and am quite convinced of its undoubted value in selected cases. I am also well aware of the ethical policy which has been adopted in every instance, and therefore cannot allow to go unchallenged certain remarks made in Dr. Boswell's letter.

I feel that Dr. Boswell is erring when he states that his patient answered an advertisement in the lay press. No such advertisement to my knowledge has ever appeared. A film actor, it is true, attained a deal of publicity following benefit obtained from the inhalation, but this can hardly be construed as an advertisement. Dr. Boswell also stated that his patient was "referred" to a medical man. An imputation of this nature stands in need of immediate correction. In order that patients may be spared the trouble and expense of unsuitable treatment, and that their medical attendants may be given every facility, it has been the policy to suggest to these patients that they might care to consult one of the many medical men experienced in the treatment, and to ascertain what benefit, if any, they may hope to receive.

Dr. Boswell attributes the unfortunate death of his patient partly to the abrupt change in temperature experienced in passing from the warm treatment room to the cold outside air and partly to the inhaled vapour. One cannot help but feel that his abrupt change, against which every patient is warned, should not have been permitted, and that any ill effects, however produced, should have been noted and the treatment modified accordingly. Obviously one cannot merely switch on and leave the rest to the machine.—I am, etc.,

H. B. FAWCUS, M.B., B.S., D.P.H.Camb.

London, S.W.1, April 7.

SIR,—I was much concerned over Dr. Boswell's letter in the *Journal* of March 13 regarding effects of chill following the Duke-Fingard treatment which ended fatally. I have had both personal experience in my own case and experience in treating patients by this method, being the first medical man in this country who tried out this new therapy. My first two cases were those of confirmed bronchial asthmatics who were sufferers of over twenty years' standing. These were both cured and have remained so, and thus was awakened my deep interest in the treatment. I have also followed its progress in various hospitals and clinics.

Bronchitic patients are a chilly race, and cannot take sufficient exercise when out to keep the body warm in cold weather. Their bronchial mucous membrane is sensitive and liable to be affected by cold, also their vasomotor systems are unaccustomed to rapid changes in temperature, and therefore this class of patient must be managed accordingly. Dr. Boswell is quite right in his conclusion "that it is unsafe for a patient to spend his nights in such a warm medicated atmosphere and to go out by day into the rigours of our climate," but I would add that in my experience it is quite safe to do so if precautions are taken. I never allow a patient to venture out after treatment till sufficiently cooled down, which takes roughly an hour. Another matter that is worth attending to with these imperfectly aerating folk is the taking of something warm on going out; if the "something" is alcoholic it is injurious, as alcohol dilates the surface vessels of the skin and increases heat loss when out of doors, and they have no body heat to lose. Let it be a warm fluid—milk, tea, or a drink of beef tea with some condiment in it. They are too scant of breath to endure the weight of heavy clothes, so these should be light enough to be borne, warm enough to

keep them from catching cold. If further precautions are deemed desirable I may say a word on the merits of the "unsightly respirator" after treatment in these cold days, or a warm muffler. This stops the cold air from chilling the respiratory tract. Regarding the odour, it is distinctive and penetrating, and certainly does linger in the house somewhat, particularly if the house be not flushed with fresh air, but if an ozone apparatus be installed in the house and used for an hour or so after treatment the odour vanishes. This tip I learnt from a colleague.

I can assure Dr. Boswell that I have never experienced any qualms over any patient I have treated by this method (and some have been under treatment over a year) provided the patient was a suitable case.—I am, etc.,

Weybridge, April 8. A. C. GREENE.

Falling Mantles

SIR,—In your issue of March 27 (p. 665), under the title of "The Mantle of Whitridge Williams," you review the seventh edition of Williams's *Obstetrics*. This excellent work is deservedly praised, but one sentence of the review states "A few typographical errors have escaped detection." I have read the book almost through, and I find that far from being a few there are very many typographical errors. This brings me to the point of my letter. Why do medical authors read the proofs so badly? I have noticed this defect in other medical works, particularly in books which have been taken over by a new author and revised. Whole pages appear to be passed over without being looked at, and errors in the original work are perpetuated. I could name many works in which I have noticed this defect. It is most annoying when trying to take an intelligent interest in the subject-matter to find the statistics the wrong way round, or a reference to an illustration which has been left out, or a reference to a page in the last edition. I feel it is up to medical authors to take a little care over the production of their works or else the mantles will soon fall off.—I am, etc.,

Dublin, April 8. E. E. D. GRAY, M.D., M.R.C.P.

Prevention of Silicosis

SIR,—It was unnecessary and irrelevant, since Mr. McLachlan believed his microbiological growth suggestion means "then it is only natural that it [coal] will adsorb dyes" (*Journal*, March 27, p. 686), that he should have asked for my evidence that coal dust was an adsorbent. And much more so that, having so needlessly been troubled to advance it, one's obligement should be transmuted into a species of affront by its requester.

For the rest, it is of course obvious that in dispersing iodine toxic doses should not be used. The same precaution would be required, but more so, with ultra-violet rays, which must be applied gradually even in daylight under resting conditions. How much more so in the relative darkness of a coal pit, for example, under the strain and perspiration of hard manual labour. The use of electrical devices is, moreover, being more than ever discouraged in coal mines because of explosive danger—which is a very practical reason for preferring iodine—so that such an alternative cure might be worse than the disease, not only as regards application, but also as regards positive explosive danger. Neither do the relative expense and intricacy of ultra-violet rays commend themselves, quite apart from the relative difficulty of disseminating them. Unlike vapours, rays do not diffuse automatically and permeate every space. Mr. McLachlan seems to confuse the adsorbent with the material adsorbed. It is of course the former, not the latter, which is more definitely particulate. And in any case until further advance can satisfy a still-searching scientific world how far there is an approach by the size of the smallest "particles" ingested to the size of molecules, the question of monomolecular films seems premature. He would be indeed bold who should state the size of the finest ultra-microscopic particles ingested into the lungs without approaching the molecular boundary. Premature also would seem the conclusion, for the preceding reason, that there is no adsorption after the examination of but one lung specimen. And in any case no adsorption of what? As Mr. McLachlan "would expect the adsorption to be of the order of monomolecular thickness" it is difficult not to wonder how he arrived at so definite a conclusion so very rapidly.—I am, etc.,

Leeds, March 30. S. C. BLACKTIN.

*** This correspondence is now closed.—ED., *B.M.J.*

Why "Nocifensor"?

SIR,—The letters of Dr. F. J. Allen (*Journal*, March 27, p. 687) and of "Lucifer" (April 10, p. 786) make me yearn to continue this correspondence and hear some more "barbarous . . . howlers." "Lucifer" would be wise to hide his light under a bushel since apparently, after he and his friends have blushed, "the fact remains that *noceo* turns into *nocivus* . . . *medeor*, belonging to the same group, into *medicabilis* and *medicatio*." It matters little that *nocivus*, like *noxius*, is very rare in Latin. But *medicabilis* and its companion happen to be derived from *medicor* (*-atus*), although I freely admit that *medicus* and *medicina*—common Latin words—are derived from *medeor*.

Dr. Allen says that years ago he called attention to the fact that "for verbs in *-eo* the compounding stem ends in *-u*." It is a pity that no one has corrected him in the interval. Since he believes that "nocifensor is as wrong as dociment," it seems worth while to point out that the rather common English words "doctor" and "doctrine" are, like the rare Latin word *documen*, derived from *doceo*. Since I am innocunt (from *in-noceo*) of any monustrous motuves (both from *moveo*), I hope, Sir, that I shall not be prohibuted (from *prohibeo*) from timudly (from *timeo*) admonushing (from *ad-moneo*) him that the horrud (from *horreo*) letters "M.D." after his name do *not* stand for "Meducinae Docutor."—I am, etc.,

Oxford, April 10. "PETER SHAW."

Oral Surgery Club

SIR,—May I beg the courtesy of your columns to bring to the notice of those of your readers who may be interested the fact that an oral surgery club has been formed in England.

The club has been formed with the object of advancing the science and art of oral surgery by providing for contact between its members, also by arranging visits to various British and foreign centres for the purpose of seeing work done by different surgeons. Membership is confined to those who specialize in oral surgery, or hold a hospital or other appointment embracing surgery, and who possess a medical or dental qualification. The following have agreed to serve on the first committee: *President:* Professor T. Talmage Read of Leeds; *Members of the Committee:* Major S. H. Woods, A.D.C., Mr. T. Hall Felton of Grimsby. If any of your readers are interested and would like information I would be pleased to hear from them.—I am, etc.,

R. S. TAYLOR,
88, Portland Place, W.1, April 8. Honorary Secretary.

The Anatomists at Toronto

SIR,—The University of Toronto played host to anatomists from the United States and Canada at the fifty-third session of the American Association of Anatomists from March 25 to 27. The papers numbered 151, and the subject-matter was most varied, representing much that in former generations would have been classed as physiology. Indeed the meetings were attended by many physiologists, biochemists, pharmacologists, and others, to whom the morphological point of view and the dynamic interpretations proved of great value. Functional changes in the various endocrine tissues, as revealed by the newest techniques, provided matter for a long list of papers. Other numerous titles were those dealing with blood cells, limb transplantations, development of teeth, the sense organs, and the gonads. It was necessary to sectionalize the programme, and at times five or six papers would be going on at once. Round-table conferences drew together six groups to consider such lively subjects as blood capillaries, neurons, sperm production, and gross anatomical investigations. Much was said about Berger waves and acetylcholine in the central nervous system; indeed H. S. Gasser, director of the Rockefeller Institute, came up to introduce the newer conceptions of the neuron at the round table presided over by Rioch, which ended by viewing the central nervous system either as a "reverberatorium" or as a "soup kitchen," with acetylcholine acting as the "soup."

Dr. McMurrich, emeritus professor of anatomy in the University of Toronto, addressed the gathering at its annual dinner on the subject of two early Canadian anatomists, and the president of the association, Professor Frederic T. Lewis, delivered an address on "The Fundamentals of Cell Shape." A gracious greeting was sent by Lord Tweedsmuir, the Governor-General, which was enthusiastically seconded by President Cody of the University. Among those who spoke at the concluding general session was C. U. Ariens Kappers of the University of Amsterdam.

Altogether the presentations and deliberations afforded a vivid view of modern anatomy, with its emphasis on living animal structure in all its manifold aspects. This science has grown to almost unbelievable dimensions, and seems only in its infancy. Seven of the sixty demonstrations were motion pictures.—I am, etc.,

University of Western Ontario, London, Canada, March 30. CHARLES C. MACKLIN.

Obituary

Dr. GEORGE HERBERT SPENCER of Jesmond, Newcastle-on-Tyne, died on March 31. He was a native of Austerfield, Yorkshire, and went to school in Doncaster, with which district his family had been associated for many years. A student of the London Hospital, he qualified M.R.C.S., L.R.C.P. in 1900 and practised for some years at Wallsend, after holding house appointments at the Hospital for Sick Children, Newcastle-on-Tyne, at the London Hospital, and the Tynemouth Infirmary. In 1914 he took command of the Military Hospital at Catterick Camp as lieutenant-colonel, R.A.M.C.(T.), and held that post until the end of the war. Since 1919 Dr. Spencer had practised in Newcastle; he was a member of the local clinical society and of the Northumberland and Durham Medical Society. Dr. Spencer joined the British Medical Association in 1907, and leaves a widow, one daughter, and one son.

Dr. ROBERT MCELROY, whose death took place at his home in Blackhill, Co. Durham, on March 6, at the age of 59 years, was a native of Co. Tyrone, and qualified as L.R.C.P.I. and L.M., L.R.C.S.I. and L.M. in 1906. He had been in general practice in Blackhill and district for thirty years, and was universally popular with his patients and colleagues. His kindly and sympathetic manner and his unfailing good humour endeared him to his patients. He was a member of the Consett Division of the British Medical Association, Divisional Surgeon to the St. John Ambulance Brigade, and a Freemason. Dr. McElroy was a faithful and loyal colleague who will be greatly missed by his fellow practitioners and a large circle of friends.

Dr. BERNARD SCOTT, who died on March 12 at his residence in Bournemouth at the age of 78, was born in Brighton, where his father was in medical practice. He became a medical student at Guy's Hospital at the age of 16, and in 1881 obtained the diplomas M.R.C.S., L.S.A. After holding the appointments of house-surgeon to the Sussex County Hospital and surgeon to the Helen Bridge Alexandra Hospital for Hip Diseases, he joined his elder brother in practice in Bournemouth in 1884, devoting special attention to surgery. In 1892 he was appointed honorary surgeon to the Royal Victoria Hospital, Poole Road, and later to the Cornelia Hospital, Poole. Despite the claims of his large practice, he spared no pains to keep himself abreast of the modern developments in surgery, and paid frequent visits to London in order to study the new applications and advances in technique. On retiring from the active staff he was elected consultant surgeon to the Cornelia Hospital. Dr. Bernard Scott joined the British Medical Association in 1890, and was very popular with his colleagues, by whom he was highly respected for his skill and great devotion to professional work. He is survived by his wife and nine children, two of whom are in medical practice; one daughter is Elizabeth Scott, the well-known architect.

Dr. ALEXANDER DYCE DAVIDSON, who died at Highgate on March 17, aged 61, was a native of Aberdeen, where his father, the late Professor A. D. Davidson, M.D., held the chair of materia medica. He studied at the University, and graduated M.A.Aberd. in 1901, proceeding to the M.B. and Ch.B. degrees in 1904. After serving as house-physician and ophthalmic house-surgeon at the Aberdeen Royal Infirmary Dr. Davidson came to London, and became senior clinical assistant in the eye department of the London Hospital, ophthalmic examiner of school children under the London County Council at the Deptford Centre, and chief clinical assistant at the Royal London Ophthalmic Hospital. He joined the British Medical Association in 1911, and was a member of the Ophthalmological Society of Great Britain and Ireland.

Dr. BASIL WISEMAN CONWAY of Fallowfield, Manchester, died on March 19. He was a student at Owens College, Manchester, and took the M.R.C.S. and L.R.C.P. diplomas in 1889. After qualifying he acted as house-surgeon at the Manchester Royal Infirmary before being appointed medical officer and public vaccinator to the Kirkmanshulme district. He had been living in retirement for some time before his death. He took a keen interest in the Manchester Pathological Society and had been a member of the British Medical Association for forty-one years.

Dr. CECILE BOOYSEN died on April 7 after an illness of five weeks' duration, at the early age of 42. Her father was a farmer in South Africa, and she borrowed enough money to come to England to train for medicine, studying at King's College and Charing Cross Hospital. After obtaining the M.R.C.S. and L.R.C.P. diplomas in 1926 she became house-surgeon at Charing Cross, and then took up general practice in North-West London, serving also for a time as clinical assistant at the Paddington Green Children's Hospital and the Royal Free Hospital. In 1926 Dr. Booysen founded a voluntary birth control clinic known as the Goswell Women's Welfare Centre, in a

very poor overcrowded district of Finsbury. In recent years her interests veered towards Left Wing politics, and after attending the Brussels Peace Conference she started and worked actively for the Medical Peace Campaign. In 1936 she was elected an associate member of the City Division of the British Medical Association, and served as representative of the St. Pancras Division at the Annual Meeting at Oxford. She was a woman of outstanding vigour and personality, whose untimely death has caused grief to many friends.

We regret to announce the death at a nursing home in Hove of Dr. FREDERICK STAPLETON DICKEY HOGG, who was for thirty-five years resident medical superintendent of Dalrymple House, Rickmansworth, a well-known home for inebriates. He was born in India in 1859, the eldest son of Sir Frederick Hogg, K.C.I.E., and from Repton School went to Jesus College, Cambridge, and thence to St. George's Hospital, obtaining the M.R.C.S. and L.R.C.P. diplomas in 1888. After serving as house-surgeon at the West London Hospital he was for a time chief medical officer to the Bengal–Nagpur Railway, returning to England in 1899 to take charge of Dalrymple House Retreat. He was an active member of the Society for the Study of Inebriety, and contributed articles on the treatment and control of alcoholism and drug addiction to Quain's *Dictionary of Medicine*, to the *British Journal of Inebriety*, and to the *Lancet*. Dr. Hogg was a man of charming personality, with many friends. He first joined the British Medical Association in 1899.

Dr. DAVID SMART of Liverpool died suddenly on April 7 while examining a seaman on a ship in dock at Bootle. He was born in 1860 in Perthshire, and from Dundee High School went to Edinburgh University, where he graduated M.B., C.M. with first-class honours in 1882, and obtained the B.Sc. in public health four years later. He won the Buchanan Fellowship, and held for a time a gynaecological post at the Edinburgh Royal Infirmary. In Liverpool Dr. Smart was for thirty-five years visiting medical officer at Smithdown Road Institution, and had also been assistant surgeon to the Hospital for Women and medical officer to the Toxteth Poor Law Hospital. He devoted many years to medical service in the old Volunteers and in the Territorial Army. With Dr. Graham Martin he raised the Liverpool Bearer Company some thirty years ago, and continued to serve until its members were transferred to field units of the 1st and 2nd West Lancashire Field Ambulances. During the war he was A.D.M.S. to the 57th and 73rd Divisions, and retired with the rank of colonel A.M.S.(T.). Dr. Smart was one of the best-known and most popular doctors in Liverpool, and his death is widely regretted.

Universities and Colleges

UNIVERSITY OF BIRMINGHAM

Lectures

A course of five William Withering Memorial Lectures on nutrition and nutritional disorders will be given in the large theatre of the Medical Faculty Buildings, Edmund Street, on April 22 and 29 and May 6, 11, and 13, at 4 p.m. The first lecture will be given by Professor W. N. Haworth, D.Sc., F.R.S.; the second and third by Professor J. C. Drummond, D.Sc.; and the last two by Professor Leonard G. Parsons, M.D., F.R.C.P. Members of the medical profession and students of medicine are invited to attend. Details of the lectures will be published in the post-graduate diary column of the *Supplement* week by week.

The Ingleby Lectures, 1937, will be given on Tuesday and Thursday, May 18 and 20, at 4 p.m., in the medical lecture theatre, by Professor Arvid Wallgren, M.D., of Gothenburg. The subject of Professor Wallgren's first lecture will be "Erythema Nodosum," and of the second "Childhood infection and Adult Type of Pulmonary Tuberculosis."

Post-graduate courses will be held in the Department of Industrial Hygiene and Medicine of the University as follows: May 24 to June 4, On the Care of the Injured Workman; June 14 to 25, Intensive Course in Industrial Hygiene and Industrial Medicine. The fee for each course is £6 6s., and full particulars can be obtained from Dr. H. E. Collier, Department of Industrial Hygiene and Medicine, The University, Edmund Street, Birmingham.

Provisional arrangements are being made for a course in neurology to be given in hospitals associated with the University of Birmingham (May to July), for practitioners desiring to enter for an examination for a Diploma in Psychological Medicine, and for others. Further information may be obtained on application to the Dean of the Faculty of Medicine, the University, Edmund Street, Birmingham, 3.

UNIVERSITY OF DUBLIN

TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

FINAL MEDICAL EXAMINATION.—*Part I* (*Materia Medica and Therapeutics; Pathology and Bacteriology*): *M. Herman, *G. E. Nevill, †F. D. FitzG. Steede, †Isabella M. Dorman, T. Fallon, F. H. Counihan, Deborah Bloom, B. Kernoff, H. McV. Buchanan, M. F. X. Slattery, J. L. Mans, J. W. Cathcart, T. W. Hanna, J. Morris, N. Marks, Mary A. Conyngham. *Part II*, M.B.: W. Hayes, H. FitzG. Sloan, O. M. Harrison, S. Tomlinson, G. K. Donald, R. W. Duncan, C. J. S. Flood, Rebecca M. R. Pike, H. M. Carson, F. J. B. Convery. B.Ch.: †Eileen D. Maunsell, †J. G. Steinbock, P. J. Mullaney, C. Mushatt, G. C. Retz, D. S. Toole, F. J. B. Convery, J. G. Cunningham, D. J. H. Douglas, P. L. van Aardt, A. J. Reeves, J. McQuillan, M. Levy. B.A.O.: *E. McG. Cochrane, *G. N. MacFarlane, *M. C. Brough, *R. E. Taylor, *H. J. Walker, †W. T. Kenny, †J. C. Lambkin, †J. E. Gillespie, †Stella M. Coen, †C. G. Reilly, †C. Cunningham, †J. A. Strong, †Jasmine Taylor, †F. C. Heatley, †H. F. T. MacFetridge, M.C. Warnock, F. A. Hanna, A. D. Parsons, R. Pollock, J. Freedman, D. G. Harrison, Grace M. Wild, J. N. G. Drury, Patricia M. J. Conway, J. G. Nixon, J. B. Plews, S. G. Heaton, M. C. Wood, J. H. Mitchell, J. R. Steen, R. Brass, C. M. Ludlow, S. Rubin.

D.P.H. (*Part I*): *T. A. Austin, *Emily M. Booth, †H. W. Dalton, Mary S. Miller.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—†K. Tatz, †M. M. Kriseman, †A. Wassef, V. D. Lespinasse.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—*Part II*: *H. J. Eustace.

* With first-class honours. † With second-class honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A council meeting was held on April 8, with the President, Sir Cuthbert Wallace, in the chair.

Diplomas and Awards

Diplomas of Membership were granted to Albert Ernest Harpin Eades, Kenneth Coate Royes, and Eric Vernon.

Diplomas in Child Health were granted jointly with the Royal College of Physicians of London to the following candidates:

Margaret D. Baber, H. B. Basu, M. L. Biswas, V. S. H. Davies, J. G. H. Frew, J. H. Green, Joyce B. Jewson, B. Kenton, A.-H. M. Kersha, S. K. Lee, G. K. Lim, Louise A. Matheson, Dorothy Miller, A. L. Smallwood, S. E. L. Stening, Elisabeth J. McQ. Thomas, Enid L. Weatherhead, H. A. Williams, Margaret C. Winter, Shuan Shi Yang.

The following Members of twenty years' standing were elected Fellows: Ernest Eric Young and Arthur George Wells.

The Jacksonian Prize was awarded to William E. Underwood (St. Bartholomew's). The subject for the Jacksonian Prize for 1938 is "Surgery of the Heart."

The John Hunter Bronze Medal with the triennial prize of £50 was awarded to Laurence F. O'Shaughnessy, M.D., F.R.C.S., for his research work on the surgery of the thorax.

The additional post of fourth house-surgeon at the Royal Surrey County Hospital, Guildford, was recognized for the six months' surgical practice required of candidates for the final Fellowship examination.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the monthly meeting of the College, held on April 2, the following successful candidates at the Conjoint Final Examination with the Royal College of Surgeons in Ireland were admitted to Licences in Medicine and Midwifery:

J. D. Clinch, J. N. Duff, S. Kavanagh, R. M. Kirkpatrick, M. G. Linehan, P. F. Meenan, K. McCaul, I. O'Ryan, T. N. Pilsworth, D. W. Rice, Nora M. Staunton, M. Stein.

The recommendation of the Conference Committee, with representatives of the Royal College of Surgeons, that a letter be sent to the Minister for Home Affairs of Northern Ireland protesting against the recent Order with reference to the appointment of medical officers in Northern Ireland was adopted.

Medical Notes in Parliament

Business arranged for the House of Lords this week included the Hydrogen Cyanide (Fumigation) Bill and a debate on coroners.

In the House of Commons on April 6 the Prohibition of Vivisection on Dogs (Scotland) Bill, which had been awaiting second reading as a private member's Bill, was withdrawn.

The Contributory Pensions (Voluntary Contributors) Bill was read a second time in the House of Commons on April 8. Replying for the Government, Mr. R. S. Hudson said the class affected by the Bill desired pensions and not health insurance. Between 1918 and 1925 45,000 persons became voluntary contributors for health insurance. From 1926 to the present time 650,000 persons had become voluntary contributors for pensions. Anyone who was a voluntary contributor to-day could continue being a contributor for health and for pensions insurance, or could become a contributor for one, dropping the other.

The Public Health (Drainage of Trade Premises) Bill, which has passed the House of Lords, was read a first time in the House of Commons on April 8.

The House of Commons read the Ministers of the Crown Bill a second time and discussed difficulties arising out of the civil war in Spain. The Maternity Services (Scotland) Bill was set down for report and third reading. The House also considered the Army and Air Force Annual Bill in Committee.

A report by the Attorney-General on the Liverpool United Hospital Bill was presented to Parliament on April 13. On the same day a standing committee of the House of Commons completed its examination of the Livestock Industry Bill.

The Methylated Spirits Bill, which passed through the Standing Committee on Scottish Bills on April 13 with an amendment affecting surgical spirits, is set down for report stage on April 23, the last day allotted to private Members' Bills. It is not in the first place on that day.

On April 13, on the motion to go into Committee of Supply on the Civil Estimates, Mr. Rowson drew attention to the evidence of malnutrition, which, he said, called for urgent administrative measures to restore and safeguard the physical well-being of the people. Sir Kingsley Wood said he had asked the authorities to review the scale of income observed in connexion with the requirement for repayment for milk or for food supplies. He had also asked the authorities to consider afresh the question of a properly organized system of meals, and he had reason to believe that the authorities would be able to continue and extend the work they were now doing. The Department would undertake certain dietary surveys which the Advisory Committee on Nutrition had recommended. This would take time, but would not stop the work now going on.

In the House of Commons on April 13, on the motion to go into Committee of Supply on the Civil Estimates, Wing Commander James called attention to the need to implement the Report of the Committee on Voluntary Sterilization, and moved "that, in the opinion of this House, the Government should give further consideration to the potentialities of voluntary sterilization for hereditary defectives in accordance with the unanimous recommendations of the departmental committee that reported to the Minister of Health on January 8, 1934." Sir Kingsley Wood said that there was no question that opinion in this country was growing in favour of sterilization, but opposition remained and there was still much conflict of opinion, particularly on religious grounds. The medical profession was by no means unanimous on the matter. The amendment was withdrawn.

The report of the Charity Commissioners for England and Wales on proceedings during 1936 says of the Voluntary Hospitals (Paying Patients) Act, 1936: "In pursuance of the provisions of the Act we made rules in relation to applications for Orders under the Act and other matters on September 15, 1936, and the rules were laid before Parliament as directed by the Act on October 10, 1936. Five applications for Orders under the Act were received by us before the end of the year, but we have reason to believe that several further applications will be received by us in the near future."

Physical Training and Recreation Bill

Mr. OLIVER STANLEY in the House of Commons on April 7 moved the second reading of the Physical Training and Recreation Bill. He said the Bill applied to England, Wales, and Scotland, and he proceeded to summarize its provisions (which have been previously published). He said that the Government did not desire under this scheme to substitute physical training for games, but to supplement games by physical training. Public attention had been concentrated on the scheme from the health point of view. Not so widely known was the remedial effect that wise physical training with a scientific basis behind it could have upon the ills to which a highly civilized and industrialized society was liable. The president of the National Union of Teachers had said that existing machinery could ensure that every school child came to physical training with a well-nourished body. If that machinery was properly used there should be no question of malnutrition in the schools, and Mr. Stanley assured the House that he intended to impress on local education authorities the need to put the machinery into the fullest operation. The recent revision of the block grant would facilitate this. As for nutrition after school life, the first reports of the Advisory Committee on Nutrition had shown that the picture of a nation suffering from malnutrition was false. It was a problem of a small minority. The Government would carefully consider the remarks made by that committee on the possibility of extending the consumption of milk both in the schools and after children had left the schools. The problem was not only economic but one in which questions of taste and of belief in milk came into play. The trend of industrial commissions was towards shorter working hours, and the regular leisure which these would provide would require more active occupation than just sitting about and resting. Physical activity alone was not going to be wholly satisfactory, but the facilities provided in the Bill might lead to the development of other and wider interests.

PROBLEM OF NUTRITION

Mr. LEES-SMITH said the scheme of the Bill was based on the voluntary principle, but there was a danger that Government assistance, being based upon existing organizations, would be given to those organizations which confined their efforts almost entirely to the black-coated workers, whereas the greatest need of physical improvement was among factory operatives and those who worked in pits. He did not believe that strenuous physical exercises up to about 25 years of age would guarantee health for the rest of a long life. Lord Dawson of Penn had pointed out that even among Territorials —a group of selected men—50 per cent. suffered from physical defects which mere exercises would not remedy. The scheme required not only the development of remedial exercises, but development of open-air recreation differing in type from violent physical exercise. Mill girls did not need more exercise but quietude and rest in the open air. The attendance of great crowds at football matches was a sign of the instinctive perception of the workers that what they required on a Saturday afternoon was some quiet interest in the open air. Mr. Stanley had spoken of the connexion between this scheme and nutrition. The Labour Opposition agreed with the dictum

of Lord Baden-Powell that it was no good imposing on underfed and ill-nourished boys hard physical exercise. The figures of the Board of Education on the proportion of school children suffering from malnutrition were not reliable. They were based on the impression made upon medical officers of health when they looked at the children. The standard taken by a medical officer of health in looking at children was that to which he was accustomed in the neighbourhood where the school was situated.

Sir FRANCIS ACLAND said that where "keep fit" classes had been introduced they were a great success and could be provided more cheaply than the football fields, swimming baths, and camping sites which were also part of the scheme. Women were at present keener on this "keep fit" work than men. His experience was that when young men who had engaged in hard manual work went to these classes in the evening they were not too tired to get great refreshment from them.

LADY ASTOR said the standard of health was now much higher, but 95,000 children entering the elementary schools yearly were physically defective in some way. Of 100 medically examined children who entered the schools 15 needed medical attention, 15 needed observation, one-half showed signs of rickets, and two-thirds had defective teeth. This could only be remedied by open-air nursery schools. A great many of these children needed sleep, fresh air, and proper play. Sleep was just as important as food. There were too few nursery schools. The London County Council had not built one.

"MINISTER OF PLEASURE"

Captain ELLISTON referred to a suggestion by Lord Horder in the House of Lords that there should be a Minister of Pleasure. The Bill made a first step in that direction. In spite of all the provision by clubs and societies, by such philanthropic bodies as the Y.M.C.A. and by great business houses, 80 per cent. of the boys of this country got no regular exercise after leaving school, and the case of women and girls was worse. Magnificent pioneer work had been done in Lancashire in providing physical classes for women and girls in every industrial town throughout the country, and the organizers had been assisted by valuable medical advice. Physical training was being exploited by all sorts of cranks without sound knowledge of the physiological considerations. The local committees would require the advice and assistance of trained experts with the highest qualifications, both theoretical and practical. Given the right instructors, there would be an immediate response from the people. He was glad the Bill empowered the Treasury to cover the cost of teaching the public the value of physical education. There would be opportunity for the Ministry of Health to include this subject in its coming campaign for educating the people in matters of health. He hoped to see on the gates of all public parks and gardens notices that an instructor would attend to give exercises to those who required them at convenient hours, and that a medical man would be attached to these instructional courses to search for signs of malnutrition, to warn persons who were unfitted for violent physical exercise, and to suggest to others ameliorative treatment to make them physically fit.

"UNIVERSITIES OF SPORT"

Mr. GEORGE GRIFFITHS said schemes of physical training would be useless for boys between the ages of 14 and 18 working in pits who, when they came home, dragged themselves along like old men. He went on to cite evidence brought forward by Sir John Orr and Dr. M'Gonigle on the small consumption of milk among the working classes. Sir SAMUEL CHAPMAN said that in Edinburgh a rate was levied for the purpose of meeting the athletic inclinations of young citizens. Four universities of sport should be established in the four great centres of Scotland.

Mr. CLEMENT DAVIES spoke of the conditions under which children were educated in rural Wales. Some toddlers of 6 were called before 7 o'clock to walk four miles to school, and when they got there there was no means of drying their clothes. At about 10.30 a.m., when they were allowed out, they ate every scrap of the sandwiches in their satchels, and when they arrived home between 5 and 6 o'clock they had to help on the farm before a meal was ready for them. Why could not money be provided to help these rural children? Mr. TINKER said those whose drudgery continued from early morning till late at night should have their hours lessened so that they could receive the benefits of the Bill.

LORD BURGHLEY said that the majority of the members of athletic teams with whom he had gone abroad were from the class to which Mr. Tinker referred, and had been placed in the Olympic Games. It was marvellous how, working as hard as they did, they found time to produce such physical fitness. Of the 150,000 members affiliated to the Amateur Athletic Association the great majority came from these classes. Champions were freaks and the House did not necessarily wish to produce them, but to raise the general standard, to make people take a pride in their physique, and to make them realize that in all physical fitness, and in preparation for sports and recreations, happiness was to be found. Mr. PILKINGTON said that he would like to see the universities have some scheme whereby every undergraduate would partake in physical exercises.

Mr. G. A. MORRISON said nutrition was the basic element of physical fitness, which also depended on attention to the health of the pre-school child. It depended upon attention to diet, to bodily hygiene, the care of teeth, and adequate practice of physical exercises during school life. Of recent years physical exercises founded upon anatomical and physiological knowledge and accurately recorded practice had had a most beneficial effect. He had consulted medical men on this subject and was impressed with the humility with which they said they did not understand all that was involved. Perhaps a new kind of expert was required with medical training and special qualifications in physical training. Attention should be directed to the provision of facilities, accommodation, and apparatus for remedial work before the young persons got too old.

Mr. WESTWOOD, discussing the application of the Bill to Scotland, said nutrition was absolutely necessary to make a success of the Bill and must be extended far beyond the school children. Professor Cathcart, in a speech which was reported in the *British Medical Journal*, had emphasized that the problem of food was frequently as much psychological as physiological. Dr. Elliot must press the local authorities to use their power to avoid malnutrition through the underfeeding of children in schools. Mr. SHAKESPEARE said some 14,000,000 persons between the age of 14 and 35 might come under the Bill. In his own constituency working boys and girls coming out of the factories, however tired they were, tried to engage in some form of exercise, such as swimming or gymnastics, and if facilities were provided in the manner proposed by the Bill more would make use of them.

The Bill was then read a second time without a division and committed to a standing committee. The necessary monetary resolution was carried through committee without discussion.

Factories Bill in Committee

Major LLOYD GEORGE was again in the chair when a Standing Committee of the House of Commons resumed on April 8 the examination of the Factories Bill. The committee proceeded to consider Part IV—Health, Safety, and Welfare (Special Provisions and Regulation).

DUST AND FUMES

On Clause 46 (Removal of Dust or Fumes) Mr. RHYS DAVIES moved to provide that the safeguards of the clause should apply not only to dust or fume, but also to other impurity likely to be injurious or offensive to any person employed. He said that in some offensive trades, such as those dealing with rabbits' skins, many impurities arose which could not be said to be fumes or dust. Mr. GEOFFREY LLOYD said that on further inquiry the Home Office found many impurities which would not strictly be covered by the words in the clause. Fume was defined in Clause 145 as including gas or vapour and would not cover liquid or the fumes of spirits, which were given out by spraying from a chromium bath. Other com-

ditions were not sufficiently covered by the word "dust." The Government would therefore accept the amendment. Mr. GRAHAM WHITE moved to alter the clause by leaving out the words "or offensive." He said that the governing word in the clause was "injurious." "Offensive" introduced an element of uncertainty. In his first employment as chemist in a factory where there was an ammonia plant on one floor those who worked there liked the aroma and had an idea that it was good for them. Under the clause it would have been necessary to close down that plant. Mr. RHYS DAVIES said he was a member of a local authority in whose area was a tripe-dressing factory, which was not injurious to the workers but was really offensive, and the authority compelled the owner to remove the factory. Mr. T. HUNTER asked how the clause would affect a linoleum factory, where the continuous smell might be regarded as offensive except by the people engaged in the factory. Sir JOHN SIMON said it was not the smell, as such, with which the clause was concerned, but the dust or fume, and the measures to be taken must be practical measures. The clause talked of dust or fume being offensive to "any person," but that did not mean someone with an idiosyncrasy, like people who could not bear cats in the room. He was inclined to recommend the committee to substitute the words "the persons employed" for "any person employed." Mr. WHITE said that alteration would secure what he had in mind. The clause was amended accordingly, and Mr. Rhys Davies's amendment to insert "or any other impurity" was added at the relevant point. The clause as amended was added to the Bill.

WASHING FACILITIES

On Clause 47 (Washing Facilities and Meals in Certain Dangerous Trades) Sir ERNEST GRAHAM-LITTLE moved to leave out the word "washing" and to substitute "cleansing," in the provision that in processes liable to cause dermatitis or other infections of the skin, and in any rooms where lead, arsenic, or any other poisonous substance was used, adequate and suitable washing facilities should be provided. He said he had to move amendments because, as the only doctor in the committee, he had received suggestions from the Royal Sanitary Institute and the Society of Medical Officers of Health. He said it was common for patients to show dermatitis and other injuries to the skin caused not by the substances with which they had worked, but by the materials used for washing their hands, such as strong soda or soap. In many processes special solvents were used, and the best way of removing a substance from the hands was to apply the solvent which was used in the process. Washing was always understood as washing with soap and water, and the amendment would give a wider choice.

Sir JOHN SIMON said "washing facilities" was an expression well known in the industrial code and must vary according to circumstances. It was better to use it rather than attempt to prescribe a sort of formula. The Home Office threw no doubt on the importance of the medical considerations urged by Sir Ernest Graham-Little, but the committee was making a general code, and he thought that "washing facilities" was a phrase which in a proper case would include proper methods of cleansing. Sir ERNEST GRAHAM-LITTLE withdrew his amendment.

INTERVALS FOR MEALS

On the subsection forbidding persons to remain during intervals allowed for meals or rest in any room where a process was carried on giving rise to highly siliceous dust or asbestos dust, Mr. ALFRED SHORT moved to insert after the word "process" the words "prescribed by regulations made by the Secretary of State." Mr. LLOYD said this amendment arose out of a proposal by Mr. Short to leave out the word "highly." It would meet Mr. Short's point. The Home Office was not satisfied with the words "highly siliceous dust," which might put the danger-point too high, but was opposed to leaving out "highly," since the clause would then apply to any room in which there was siliceous dust which could be chemically or physically detected. Siliceous dust in minute quantities and harmless from a pathological point of view was present in many workrooms, and was probably present in the room in which the committee was then meeting. The committee was therefore forced back on the method of allowing the Secretary of State to prescribe what was a room in which there was sufficient siliceous dust to be dangerous.

The committee accepted the amendment and Mr. Short's subsequent amendment to leave out the word "highly." Mr. RHYS DAVIES moved to extend the prohibition against remaining in the room during meal time to the taking of food and drink in that room. Mr. LLOYD said siliceous and asbestos dust, while dangerous to breathe, was not dangerous to swallow, unless, perhaps, if taken deliberately by the sackful. It was therefore unnecessary to prohibit workers from swallowing a sandwich or a bar of chocolate, or drinking a glass of water during the actual working period. The amendment was withdrawn and Clause 47 was added to the Bill.

"SHUTTLE KISSING"

On Clause 48 (Shuttle Threading by Mouth Suction) Mr. RHYS DAVIES raised the debate by proposing to leave out the provision that regulations made by the Home Secretary on "shuttle kissing" should be special regulations. He said the habit of shuttle kissing which prevailed, especially in the Lancashire cotton industry, had grown up for the purpose of speed, but both employers and workers would like to do away with it. A mechanical device for shuttle threading was shortly coming on the market. His amendment would enable the practice to be abolished once and for all without special inquiry. Mr. J. HEPWORTH said he found most employers in the woollen textile industry provided apparatus for threading the shuttle, but the difficulty was to get the employees to use it. In Bradford one employer of 2,000 weavers provided every weaver with an apparatus for threading the shuttle, but not one in a dozen would use it. If regulations were made there would have to be a special regulation to compel employees to use the apparatus.

Mr. BURKE said there was not as much shuttle kissing in Yorkshire as in Lancashire. Apart from the injury to health, it was injurious to the teeth. In Lancashire a condition commonly known as "weaver's teeth" resulted from shuttle kissing. Sir JOHN SIMON said it had not been proved that this practice produced injurious results, but he would make inquiry into what Mr. Burke had said. The words "special regulations" had been put in in order to get the views of everybody who had knowledge of the subject before the Departments proceeded to make regulations. Sir ALFRED LAW said that in some factories there was no shuttle kissing. He was a member of a firm which made woollen goods, and he had not seen anything of the sort. Mr. RHYS DAVIES withdrew his amendment on Sir John Simon promising to look into the matter further, and Clause 48 was added to the Bill.

Clause 49 (Prohibition of Use of White Phosphorus in Manufacture of Matches) was added to the Bill without discussion. Clause 50 (Humid Factories) was also added to the Bill, with an amendment to deal with the case where combing and spinning were carried on in different rooms.

UNDERGROUND ROOMS

On Clause 51 (Underground Rooms) Mr. SHORT moved to vary the conditions on which an underground room, used not only for storage or excepted purposes, could be certified by the inspector for the district to be suitable for factory use. The clause as drafted provided that the certification should be one of unsuitability. Mr. Short said the amendment would bring factories into line with underground bakeries by ensuring that there should be certification for use. Mr. LLOYD said that in the clause an underground room meant any room half of which was below the level of the ground. Underground rooms as defined in the clause were not necessarily bad, especially having regard to the new provisions for lighting and ventilation. Information in the Home Office indicated that an improvement had taken place; there were good reasons for allowing basement rooms to be used for machinery.

Miss HORSBRUGH said in large towns work was done in any number of small underground rooms, and in many dressmakers' premises girls worked in underground rooms which were entirely unsuitable. Sir JOHN SIMON said the clause as drafted was in the form in which it appeared in the Factory Bills of 1924 and 1926. It would be a new provision in the law and

an improvement. A general census of underground rooms would take a long time and divert inspectors from other important work. Mr. SHORT withdrew his amendment, and Mr. SILVERMAN withdrew an amendment to provide that the height of such underground rooms should not be less than 8 feet 6 inches measured from the floor to the ceiling.

Sir ERNEST GRAHAM-LITTLE moved to provide that the inspection should be by the district council in consultation with the factory inspector. He said he was advised by the Society of Medical Officers of Health that if the district council was invested with authority the provisions would be carried out. Sir JOHN SIMON said that on questions of unsuitability of the room or inadequacy of ventilation the factory inspector would be the better judge. He hoped the Society of Medical Officers of Health would be convinced that the Bill was better as it stood. The amendment was withdrawn, and the clause was then added to the Bill.

BASEMENT BAKE-HOUSES

On Clause 52 (Basement Bake-houses) Mr. BANFIELD proposed to provide that the exemption for existing basement bake-houses should not extend beyond five years before the passing of the Act. The clause before the committee had been passed in 1901, when a Factory Bill was under discussion, and Government spokesmen had then said that within twenty years underground bake-houses would be abolished. Thirty years had passed and underground bake-houses were still numerous, particularly in London. It was now easy to construct baking ovens of steel, and the House should say that the time had come when underground bake-houses should be shut. Men worked there in an atmosphere of sulphur, heat, and steam.

Mr. LLOYD said it was unlikely there could be evidence to justify prohibition of all basement bake-houses five years hence. Bake-houses could only be used under the present law if they were certified by the district council as suitable. The strengthening of the law on new bake-houses was to be considered in consultation with the Ministry of Health. Sir JOHN HASLAM, Mr. RIDLEY, and Mr. MANDER supported the amendment. Sir JOHN SIMON said the matter was important, but the amendment had only been printed for the first time that morning, and he wished to get his officials to inform him on it. He would like to see an opportunity taken to discourage the continuance of these old underground bake-houses. On this assurance Mr. BANFIELD withdrew his amendment and Clause 52 was added to the Bill, as was Clause 53 (Laundries). Sir JOHN SIMON remarked that laundries were not necessarily factories. An Act of 1907 dealt with laundries as an addition to the general provisions of the Factory Code, and that Act applied regulations in respect of ventilation and other matters to all the rooms in the laundries. The clause in the Bill merely proposed additional provisions. The clause was added to the Bill, and the committee adjourned until April 13.

Nutrition and Family Budgets

Mr. DUNCAN SANDYS asked on April 8 whether it was the intention of the Government to institute the inquiries into income distribution, family budgets, and diet recommended by the Advisory Committee on Nutrition in their recent report in so far as these were not already covered by existing investigations. Sir KINGSLEY WOOD replied that this was intended. The dietary surveys had already begun. As regards family budgets, it was hoped to obtain information as to food consumption in the course of the inquiry undertaken by the Minister of Labour for the purpose of the revision of the cost of living index number. The method of carrying out the inquiry into diet was receiving consideration.

Sir Kingsley Wood also assured Mr. Sandys that recommendations made by the Milk Reorganization Commission for the increased consumption of liquid milk were receiving the Government's careful consideration. He had issued a circular on April 1 to maternity and child welfare authorities inviting attention to the Report of the Advisory Committee on Nutrition, and urging them to review their arrangements for the supply of milk in the light of that report. Sir Kingsley further informed Mr. Sandys that recommendations made by the Advisory Committee on Nutrition that the consumption of potatoes should be increased were receiving consideration together with the other recommendations of the committee, but he could not say what further action might be taken.

Animals in Films

In the House of Commons on April 9 Sir ROBERT GOWER moved the Second Reading of the Cinematograph Films (Animals) Bill. He said its purpose was to prohibit production or exhibition of films depicting sufferings of animals or in the production of which suffering might have been caused to animals. Sir Francis Fremantle had pointed out that the Bill in its present form would prevent the exhibition of films to students in medical schools showing experiments upon animals, and the result would be that more animals would have to be experimented upon. On behalf of the promoters of the Bill he had agreed with Sir Francis that if the Bill obtained a Second Reading that point would be dealt with in Committee.

Mr. GRAHAM KERR said he could not support the Bill. The cinema had become a great factor in biological teaching and investigation. It gave access to the study of living creatures which would not otherwise be accessible and had become extraordinarily useful by its power to interfere with the time factor. If disease cells like cancer cells were examined with a microscope no movement could be seen although they were alive. But it was possible to take moving pictures at intervals and afterwards to run the film through projecting apparatus to show those cells in activity. That way would eventually lead to the full understanding of many diseases. Other movements were so rapid that they could not be followed with the eye but could be studied in the slow-motion picture. Everyone, even those people who thought experiments on animals justifiable, agreed that the more the number of experiments on living animals could be reduced the better. The cinema film gave a method by which they could reduce such experiments.

Col. MOORE intervened to repeat the assurance that such experiments would not be impeded by the Bill, and said Sir Francis Fremantle, representing the medical profession, had suggested an amendment meeting every point which Mr. Graham Kerr had raised. Mr. GROVES said he had witnessed official cruelty to animals under the aegis of the Home Office at Hendon, where surgeons made incisions in the belly of calves and the surgeon was followed by a student who rubbed in some pus. This deadly poison was eventually used as calf lymph to perpetrate the practice of vaccination. There was much cruelty involved in the process.

Mr. GEOFFREY LLOYD said the Home Office was substantially in agreement with the objects of the Bill. The conditions normally imposed in licences issued under the Cinematograph Act, 1909, gave local licensing authorities complete control over the films exhibited in cinemas. The Home Office felt that the existing powers were sufficient, and so far as films produced in this country were concerned, the ordinary law relating to cruelty to animals could be invoked.

The Bill was read a second time and sent to a Standing Committee.

Health Insurance Referees

On April 12, Mr. HUDSON informed Mr. Graham White that eight referees had been appointed under Section 90 of the National Health Insurance Act in England and Wales. Their remuneration was a fee not exceeding 10 guineas a day, or 12 guineas where a hearing extended beyond seven hours.

Supervision of Nursing Homes

On April 12, Miss RATHBONE asked the Minister of Health if he would institute an inquiry into nursing homes all over the country, in view of the many complaints of the inadequate and insufficiently qualified nursing staffs and the insufficient precaution taken in regard to the prevention of infection. She also asked if he had reason to believe that nursing homes were adequately inspected from the point of view of the sufficiency and qualifications of the nursing staff, and that adequate care was given to the prevention of infection, particularly when maternity patients were taken as well as general medical and surgical cases. Mr. HUDSON said that

the attention of local authorities had recently been called to the importance of the adequate supervision of nursing homes in a circular letter of September 30 last. The Minister of Health saw no necessity for a special inquiry.

Medico-Legal Institute

Captain G. S. ELLISTON asked on April 8 whether, in accordance with the recommendations of the Advisory Committee on the Scientific Investigation of Crime, it was proposed to establish a medico-legal institute for pathological research and as a training centre for experts in medical jurisprudence. Sir JOHN SIMON replied that the committee's report was primarily concerned with measures for improving medical education in certain directions. He was in sympathy with the recommendations, but these fell also within the province of the Minister of Health, with whom he was in consultation. The committee's proposals would involve a substantial charge upon the Exchequer.

Medicine Stamp Duties

On April 6 Sir ROBERT BIRD asked the Chancellor of the Exchequer whether he was aware of the great anxiety felt by those members of the Pharmaceutical Society who were engaged in trade, over the recommendations in the report of the Select Committee on Medicine Stamp Duties; and whether it was his intention to introduce legislation implementing the recommendations wholly or in part. He also asked what steps it was intended to take to terminate the loss to the revenue consequent upon the avoidance of the payment of medicine stamp duties disclosed in the report.

Mr. CHAMBERLAIN said that due weight would be given to all relevant considerations in connexion with the committee's report, but he was unable at present to make any further statement on the matter.

Animal Experiments Without Licence.—Mr. WM. LEACH asked on April 8 whether the Home Secretary had come to a decision whether the case mentioned in the annual return of experiments on living animals in the year 1935, of an experimenter who performed some inoculation experiments without the necessary licence and certificate, was or was not in contravention of the Act, for which a penalty not exceeding £50 could be imposed. Sir JOHN SIMON in reply said the nature of this case was stated in the passage of the return to which Mr. Leach referred. It was carefully considered whether there should be a prosecution but, in all the circumstances, it was decided that the appropriate course was to suspend the granting of the licence, for which application was made, for six months.

Silicosis in Coal Miners.—Mr. JAMES GRIFFITHS on April 8 asked what progress had been made by the Medical Research Council in its investigations into the problem of silicosis and other lung disease among coal miners; and when the investigation would be completed. To this question Mr. RAMSAY MACDONALD answered that the standing committee appointed by the Medical Research Council to direct research into disease of the lungs among industrial workers had already promoted several investigations into silicosis and other conditions. The results had been published in official reports and scientific papers. These researches were in most cases not specially directed to the particular problem of lung disease among coal miners, but during recent months attention had been concentrated on this, and a scheme of intensive investigation had been initiated in South Wales. The work already done showed the problem to be one of great difficulty and complexity, and the investigation was not likely to be completed in less than two years.

Nursery Schools.—Mr. SHAKESPEARE told Mr. Lyons, on April 12, that eighty-six nursery schools were recognized by the Board of Education, of which eighty-three were recognized for purposes of grant, and three as efficient but not in receipt of grant. In addition, thirty-four proposals for new nursery schools had been approved in principle, and in a number of these cases final plans had been approved by the Board. Seven proposals were at present under consideration.

Medical News

A meeting of the Chelsea Clinical Society will be held at the Hotel Rembrandt, Thurloe Place, S.W., on Tuesday, April 20, at 8.30 p.m., when Mr. E. Rock Carling will open a discussion on "The Doctor and his Dependants." The meeting will be preceded by dinner at 7.30 p.m.

At the meeting of the Royal Microscopical Society to be held at B.M.A. House, Tavistock Square, W.C., on Wednesday, April 21, at 5 p.m., Dr. E. S. Horning and Mr. K. C. Richardson will present a paper, illustrated with colour cinematograph film, on "A New Tissue Culture Technique."

The Rt. Hon. A. Duff Cooper, Secretary of State for War, will speak on "The Psychology of the Army" at a public luncheon on Thursday, April 22, at the Princes' Restaurant, Piccadilly, W. The luncheon is one of a series organized by the National Institute of Industrial Psychology, Aldwych House, W.C.2.

At a meeting of the Royal Sanitary Institute in the Tudor Barn, Well Hall Pleasuance, Eltham, on Friday, April 23, at 5.45 p.m., a discussion will be held on the provision of open spaces.

The inaugural meeting of the Greater London Provident Scheme for District Nursing will be held at Grocers' Hall, Princes Street, E.C., on Monday, April 19, at 4 p.m. The Earl of Athlone will preside, and the speakers are Lord Horder, chairman of the council, and Miss Wilmshurst, general secretary of the Queen's Institute of District Nursing. The Scheme aims at providing an organization self-sufficient and auxiliary to various district nursing services in the metropolitan area. The object of the meeting is not to make any appeal for funds but to arouse interest.

The congress known as Journées Médicales de Paris will be held under the presidency of Professor Carnot from June 26 to 30, when hormones and endocrine treatment will be the subject for discussion. The subscription is 50 francs. Further information can be obtained from La Revue Médicale Française, 18, Rue de Verneuil, Paris 7e.

The attention of over-seas members of the University of London Medical Graduates' Society is drawn to the fact that the annual dinner will take place in the new buildings of the University Bloomsbury, W.C.1, on Thursday, May 6, at 7.15 for 7.45 p.m. It is hoped that as many as possible will be present, particularly as this is the first occasion on which the annual dinner is to be held in the new buildings. Members may bring guests, who may be medical or non-medical and who need not be graduates of any university. Applications for tickets should be made to the secretary, 9, Hardinge Road, London, N.W.10, if possible before April 29. The price of the ticket is 12s. 6d., exclusive of wines, and a remittance, made out in favour of Mr. Philip H. Mitchiner, M.D., M.S., should accompany the application.

An exhibition of water-colour drawings of game-birds, duck, etc., from Iceland, Scotland, the Fens and Brecks, by Dr. E. A. R. Ennion, will be on view at the Greatorex Galleries, 14, Grafton Street, W., until May 15.

A national industrial safety conference is being held this week-end at Balliol College, Oxford, under the auspices of the National "Safety First" Association, whose office is at 52, Grosvenor Gardens, S.W.1. The main subject for discussion is "Training Young Workers for Safety."

It is announced that the St. George's Hospital hay fever clinic reopened on March 30. Already 500 applications for treatment have been received, and no more can be considered at present. Last year 243 patients were given three treatments each.

The *Practitioner* for April is a special number containing articles on "The Use and Abuse of Drugs and Preparations."

The March issue of *Le Sud Médical et Chirurgical* is devoted to paediatrics, and the issues of *Le Bulletin Médical* for March 27 and of *Paris Médical* for April 3 to gastro-enterology. The issue of the *Medizinische Klinik* for April 2 is devoted to skin and venereal diseases. The issue of the *Wiener medizinische Wochenschrift* for April 3, which is devoted to modern paediatrics, is dedicated to Professor Julius Zappert, whose portrait it contains, on the occasion of his seventieth birthday.

The 100,000-franc prize associated with the name of Albert I of Monaco has been awarded by the French Academy of Medicine to Dr. Paul Bouin and Dr. Ancel, whose work in collaboration on the sex hormones and on the interstitial glands in man is well known.

Professor Levaditi of the Pasteur Institute in Paris and a member of the French Academy of Medicine has been appointed by the Executive Committee of the French League against Venereal Diseases as scientific director of the Alfred Fournier Institute.

Professor Archibald Young and Dr. J. G. McCutcheon have been appointed Deputy Lieutenants for the County of the City of Glasgow.

Dr. L. Montanari of Parma, who recently celebrated his 104th birthday, is in good mental and physical health.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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QUERIES AND ANSWERS

Mementoes of Laennec

Dr. AGNES F. TURNER (County Buildings, Dumfries) writes: I have in my possession a Laennec's stethoscope which belonged to my grandfather, with an accompanying booklet of translated extracts from Laennec's work. I should be glad to hear of any museum to which I might send this, or any medical or scientific society which would be interested to have it.

Painful Feet

"K. D. K.," in reply to "Perplexed" (April 3, p. 738), writes: Sponge rubber in-soles are used in the orthopaedic departments of many of the London hospitals and by chiropodists. Sponge rubber, one-eighth of an inch in thickness, is cut to the shape of the sole and brought forward from the heel to the metatarsal heads, a second layer is then placed on top, stretching from the metatarsal heads backwards for about two inches—this should be skived, anteriorly and posteriorly, and fitted with the thickness coming just behind the heads of the metatarsals. The upper surface is then covered with chamois leather and glued together with some rubber solution (such as is used for mending tyres). These in-soles can be removed from one shoe to another, the suction of the rubber on the under surface prevents any movement in the shoe, the slight thickness under the heel will stop any "jarring" when walking, and the increased thickness behind the metatarsal heads will remove the excess pressure from the heads.

Oxaluria

Captain C. A. DE CANDOLE, R.A.M.C. (Woolwich), writes in reply to "Perplexed" (*Journal*, March 13, p. 593): I would suggest that the diet be modified to exclude the following: all fruit and vegetables except cauliflower, lettuce, and apples, and even these in minimal quantities; tea, coffee, cocoa, chocolate, jam, pepper, and anything containing gelatin. If oxalates continue to be passed in the urine bread and potatoes should be forbidden, and the fruit and vegetables still further reduced. Meat and eggs are permissible. As soon as the urine is free from oxalates whichever prohibited article is most desired may be allowed, and by watching the urine the maximum permissible discovered, others being added one at a time if the urine remains clear. Plenty of fluid may be taken and an alkaline mixture prescribed, as by this means the absorption of oxalic acid from the intestine is hindered.

LETTERS, NOTES, ETC.

Disclaimer

Professor A. E. NAISH, M.D., writes. My attention has been called to recent articles in the provincial lay press in which it is stated that a research group is working at Sheffield University under my direction investigating the treatment of haemophilia. I wish to state most emphatically that these articles have been published without my knowledge, and that, although I have been associated with the work, it is not being done under my direction.

Nutrition and Infectious Disease

Dr. J. T. EDWARDS writes: In the report you have published (p. 773) of the discussion on "Nutrition and its Effects on Infectious Disease" at the meeting of the Comparative Section of the Royal Society of Medicine held on March 24 last I am stated to have said, ". . . it was often observed by veterinary surgeons who had to deal with *tuberculosis* that high-class stock fed and kept in the best conditions suffered more severely than lean beasts when disease was allowed to run its course." The disease dealt with in my paper in this connexion was *foot-and-mouth disease*, not tuberculosis.

Ascorbic Acid

In our account last week of the discussion on nutrition and infectious disease Mr. A. L. Bacharach was twice reported on page 775 as having mentioned "ascorbutic acid." This, as he points out, is incorrect. "The accepted name—by workers in all English-speaking countries, except the American Medical Association—is ascorbic acid, originally suggested by Professor W. N. Haworth as more convenient than 3-keto-*l*-gulonolactone, the full descriptive name of vitamin C."

Classification of Serum Proteins

Dr. HARRY COKE (London, W.1.) writes: May I be allowed to point out two slight errors in the report of a meeting of the Committee for the Study and Investigation of Rheumatism, on page 778 of your issue of April 10. It was I, and not Dr. Frank Coke, who spoke of the discovery of a new classification of serum proteins by the ultra-centrifugal methods by MacFarlane (*Biochem. J.*, 1935, **29**, 1175), and the more recent discovery of a very large protein molecule in certain acute conditions. I would wish to re-emphasize that this is entirely the original work of MacFarlane and is a point that was apparently not made completely clear. What I did mention was the confirmatory findings of this from a purely chemical and colloidal point of view.

Medical Golf

The qualifying round of 18 holes medal play in the knock-out tournament of the Medical Golfing Society was played at Addington on April 8. The following qualified and will compete by match play for the prize: F. McG. Loughnane, J. A. Flaherty, J. Grace, J. D. McGrath, A. G. Palmer, Stanley Wyard, N. L. Eckhoff, Michael Smith, and L. Bathurst.